

ORIENTAL





ORIENTAL COLLECTION
OF
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CONTENTS.

INTRODUCTION,	v
WRITERS ON ORIENTAL ART,	i

CHINESE SECTION.

POTTERY AND PORCELAIN :

Père d'Entrecolles,	9
Stanislas Julien,	23
JADE,	38
METAL VASES AND BRONZES,	45
SYMBOLICAL ORNAMENTS,	49

JAPANESE SECTION.

POTTERY AND PORCELAIN,	63
LACQUER,	68
SWORDS,	75
BRONZES,	84
PAINTING,	91
CARVINGS,	94
CLOISONNÉ ENAMEL,	95

ANCIENT AND EUROPEAN SECTION.

ANCIENT POTTERIES,	97
EUROPEAN POTTERIES,	109
EUROPEAN PORCELAIN :	
Dresden,	123
Vienna,	124
Sèvres,	124
Berlin,	126

INTRODUCTION.

We submit to our friends, and those generally interested in the subject, the result of our efforts for more than twenty years as collectors of Oriental objects of art, mainly Chinese and Japanese. Our interest and effort have been more in the direction of securing characteristic examples of the beautiful, either in form, color or material, than of the merely *curious*.

Regarding the Ceramic Art from the standpoint of true decorative principles, whether in its strongest characteristics, or in the more subtle refinement and delicacy of treatment both of color and general manipulation, there can be no question that the Chinese have established their preëminence in this artistic development, compared with all that has been accomplished up to the present time; therefore the Collection will be found to be made up largely of the products of that remarkable people. In comparison with the productions of all other countries, their colors will be found to possess less meretriciousness, greater strength and depth, as well as greater elegance. We refer, of course, to their ancient productions, say previous to the middle of the last century, when the decadence of the art had become manifest, stimulated no doubt by the demands of European commerce, not for peculiar or single art objects, but for thousands of the mechanical reproductions of the same thing.

For the cause of art, it is sad to feel that this is the direction in which the Japanese also are tending—a people

discovered by Western nations some thirty years ago in possession of a noble and elevated original art, so original and impressive, that its influence has largely revolutionized the principles and augmented the beauty of decorative art as previously practiced by Europeans, as well as by ourselves. As an illustration of the artistic value attached to Chinese porcelain by Europeans, particularly by the French during the last century, examples will be found in the Collection with bronze and other decorative mountings executed by the best talent, and at an expense far exceeding the commercial value of the object before mounting. Visitors to the Museum of the Louvre will also recall the splendid specimens deposited there, which belonged to the collection of the unfortunate and accomplished Queen of Louis XVI, who contributed so much to this "epoch of good taste."

The Chinese themselves have been noted for their advanced taste in the preference they have evinced for simple or solid colors (in producing which great perfection was reached), rather than for the more elaborate decorations of a later period. Thus they parted with the three beautiful colors, Sang-de-bœuf, Coral, and Peach (also called Crushed Strawberry), with such reluctance that until within the past few years these colors were hardly known to have existed outside of China. The exorbitant prices offered by Europeans and Americans at last proved too great a temptation. Some twenty examples of these fascinating colors will be found isolated on the bridge connecting the Picture and Oriental Galleries. The production of these colors is supposed to have ceased with the close of the sixteenth century, some three hundred years since. A very intelligent and practical gentleman, head of one of the largest ceramic

producing establishments of England, said to us: "We spent several years and more than thirty thousand dollars in experiments to produce the Sang-de-bœuf color. The chemical knowledge required to produce the peculiar effect was not our greatest trouble; we not only found that the exact degree of heat in baking was a desideratum, but a still greater one was the precise time the objects required to be exposed to this temperature, inasmuch as ten seconds more or less were fatal, causing the result to be either black or white. After hundreds of experiments which proved failures we abandoned it as hopeless."

In refinement and delicacy, if possible, even these colors are excelled by the various shades, beginning with light Rose and running into Ruby, found mainly in the treatment of the backs of the finest Egg-shell plates and cups and saucers. In our own time as well as previously, persistence and intelligence have been used, and large sums of money wasted in endeavoring to reproduce the Chinese colors. Two gentlemen, one the head of an establishment in France, the other of one in England, where most has been done in this direction, have said to us in the past year that they regarded all their efforts as having been signal failures. We accepted the invitation to inspect the private collection of a gentleman in France, whose name is best known in our country for his success in modern ceramic production. Expressing our surprise at finding nothing but the Oriental in his collection, "Oh, yes," he replied, "I desire to leave to my children that which is most beautiful and perfect of its kind."

If the palm is to be awarded to the Chinese for their ancient ceramic productions, it must be admitted that the Japanese excel them as to their modern work. This applies equally to the Japanese artistic efforts both

ancient and modern, in all metal work, including gold, silver, bronze, iron, or in combinations or alloys of metals. One of the foremost expressions of artistic individuality is undoubtedly their exquisitely beautiful lacquer.

In the department of Japanese Pottery it is not difficult to discover a certain simple but characteristic elegance and originality which imparts to it a peculiar fascination. It is very true that the Japanese may be referred to as allowing themselves to be subjected to foreign influence; this is the case not only as to their arts and science, but their language, literature and writing, have been derived from other countries—in a great measure from China and Corea. Even one of their leading religions has a foreign origin. Notwithstanding, however, their indebtedness to other lands, they have imparted to their borrowed acquirements a charm of their own, which has been fostered by powerful and highly cultivated nobles, a class not existing in China. Thus Satsuma faience, though originally attributed to Corean potters (who were brought to Japan), very soon assumed qualities and characteristics unlike any Corean examples we have ever met, which, for the most part, are crude and unshapely. We refer with great interest to a very comprehensive illustration of Satsuma ware in the Collection, which will be found to possess unique and interesting features as a branch of the potter's art.

No attempt has been made to arrange the Collection chronologically, but examples will be found in the department of Ceramics covering the history of its production for about eight hundred years, and in that of Lacquers for about seven hundred years. In the main, Chinese and Japanese objects have been kept carefully distinct. This is especially the case in the Ceramic department. The

distinction has not been so carefully observed between the more primitive examples of Corean and Japanese Pottery and Faience.

In pursuit of the subject, Oriental Art, besides a somewhat protracted residence abroad, together with frequent visits to Europe, it has been our privilege, and we esteem it a great one, to have been enabled to visit all the Universal Expositions held in the past twenty-five years. We recall with great vividness the surprise and pleasure we experienced in the revelations of the Oriental Department of the London International Exposition of 1862, and the interest excited in us by this first exhibit of Japanese Art Objects in a foreign country. The collection, numbering several hundred examples, was the property of and sent there by the liberal and intelligent enterprise of Sir Rutherford Alcock, at the time Resident Minister of Great Britain at the Court of Japan.

A further impetus and additional interest was imparted by the Japanese Government taking charge of their more comprehensive exhibit, and appointing commissioners to represent them at Paris in 1867, and at Vienna in 1873. To the latter of these Expositions we were officially related. Not one of the least interesting incidents of our experience there was encountering the collection of Chinese porcelain, owned and sent by Prince Ehtezadesaltanet, uncle of the Shah of Persia. The collection contained many rare and desirable objects, all bearing date previous to 1630, up to which time Persia was the central point of the route from China overland to the West. Our Collection contains a number of the choicest selections from this remarkable exhibit, a part of them with intricate and characteristic Persian mounts in metal.

All Americans will recall the remarkable display made by both China and Japan at our great "Centennial."

It is well known that the largest collection of Oriental, as well as of European objects of Ceramic Art is to be found in Dresden, the property of the Saxon government. The Oriental part, mainly Chinese and Japanese, was secured between 1694 and 1705, by Augustus II, King of Poland and Elector of Saxony. The European part has been added to from time to time until the whole collection comprises about fifteen thousand objects, of which some nine thousand are Chinese. The Oriental portion, important as it is, and in some respects unequalled, is nevertheless wanting in examples of the finer qualities to impart a complete comprehensiveness. It may be accepted that nowhere are such advantages presented to the student of Ceramic history, nowhere is the entire ground so fully and intelligently covered, as at Dresden. We should feel ourselves wanting in appreciation if we failed to recognize the advantages placed there within our reach on the occasion of our frequent and protracted visits. Its usefulness impressed us more and more after each visit, and it is always our desire to return to this charming Museum, and also to the otherwise attractive "Florence of Germany."

The following extract, from a letter just received from an intelligent personal friend, who recently paid a visit to Sèvres, beautifully describes his impressions of that establishment and its collections. He says:

"Alas! Sèvres is not very rich, and its funds scarcely enable it to compete with the great amateurs. Madame de Pompadour is no longer there to watch over her favorite creation, flattering the artists and organizing exhibitions of Sèvres ware in the château of Versailles; selling the ware, even, and imposing on the Court this new fashion and this new expense by all the means that a favorite commands. 'It is to fail in one's duties as a citizen,' she

used to say, 'not to buy this porcelain as long as one has any money.' It is to Madame de Pompadour that France owes the establishment of Sèvres and the discovery of that porcelain that rivalled the hitherto unique Saxe. It is to Madame de Pompadour, to the caprice of an adorable woman who was almost a Queen, that we owe the deliciously affected Louis XV. Sèvres, into which Madame de Pompadour put something of her beauty, of her smile, and of her charm.

"About the technicalities of the manufacture of Sèvres porcelain, the mysteries of *pâte tendre* and *pâte dure*, and the combined excellences of the new *pâte* discovered by the present administrator of the manufactory, M. Lauth, you must not seek information here. I am simply reminding you of the existence of a fine museum which few visitors to Paris ever reach, a museum where they will be able to see the progress of pottery and porcelain from the most ancient times up to the present day. The arrangement of the museum is simple and admirable. There are there specimens of all of the known faïences and porcelains; not all fine specimens, it is true; still there they are, ticketed and dated and classified by origin and family. Old Egyptian, old Roman, Gallic, Oiron ware, faïences of Urbino, of Gubbio, of Lucca della Robbia, Moustiers, Nevers, Rouen, splendid enamelled faïence stoves, a magnificent work-table, the top of which is an immense tray of Rouen ware, Hispano-moresque pottery with its metallic reflections, Medicean ware and Sèvres ware of all epochs, some of which—as, for instance, the epoch of 1830-40—are marvellous for the bad taste of the shapes and designs as they are for the perfection of the execution. Then there are cases full of the delicious porcelain of Japan and of China, the porcelain of China superior to all the porcelains

of the universe, that porcelain that for centuries and all over the globe has had collectors more crazy and passionate than any other branch of curiosity—that porcelain whose perfection the Chinese attributed to the intervention of the Spirit of furnace fires, who protected the baking of the works of the Ceramists, whom he loved. Here are marvels; porcelain translucent as jade; blue porcelain, blue as the sky, thin as paper, brilliant as a mirror,; white *Chou* porcelain, whose whiteness, according to a Chinese poet, surpasses the whiteness of snow, and whose sonority is more plaintive than the wind that whispers amongst the reeds on a sunless day, for the poets of the extreme Orient sing of the beauties of porcelain as our poets would sing of a fine landscape. Truly there is no greater enchantment for the eyes of a colorist than the delicacies of the palette of the Chinese Ceramists, those consummate artists who could satisfy the desire of Chi-Tsong and produce porcelain of the blue of the heavens after rain in the intervals of the clouds.”

In another portion of the house will be found about two hundred objects of European porcelain, mainly Sèvres, Vienna, Dresden, and other German manufactories; these, we think, will be useful for comparison with each other and with the productions of Oriental art.

Our Oriental Collection comprises at the present time about 4100 objects, distributed as follows:

Chinese Porcelains and Potteries, 1400; Japanese Porcelains and Potteries, 400; Metal objects composed wholly or in part of Gold, Silver, Iron, Copper, etc., 200; Bronzes, 200; Swords, 150; Sword Guards, 300; Seppa, Habaki, and Kojiri (appliances of the sword), 400; Ivories, including Netsukes, 500; Lacquers, including Inros, 500; other objects, 50.

In preparing the following pages we acknowledge ourselves indebted to the intelligent gentlemen of China and Japan whom it has been our pleasure and edification to meet in our own country as well as in Europe. Our obligations are particularly great, however, to Mr. A. W. Franks (now of the British Museum), the most thorough investigator we have met, and a gentleman whose intelligent opinions and just conclusions we fully accept and adopt.

We commend to students, as well as amateurs, the following authors, from whose writings we have derived great satisfaction and profit, and which have been largely used in compiling these pages:

Lettres édifiantes et curieuses, écrites des Missions étrangères. Nouvelle édition (publiée par l'Abbe de Querbeuf). Paris, 1780-1783. Preferred to the first edition, which was printed in Paris, 1717-1776. *Père d'Entrecolles'* letters will be found in volumes 18, 19.

Traité des Arts Céramiques. Par A. Brongniart. Paris, 1844.

Histoire et Fabrication de la Porcelaine Chinoise. Ouvrage traduit du Chinois. Par Stanislas Julien. Paris, 1856.

History of Pottery and Porcelain, in the 15th, 16th, 17th and 18th centuries. By Joseph Marryat. London, 1868.

South Kensington Museum Publications, especially:

Japanese Pottery and Porcelain. By A. W. Franks. 1880.

Collection of Articles of Japanese Art. By W. J. Alt. 1876.

Maiolica. By C. Drury E. Fortnum. 1876.

Persian Art. By Maj. R. Murdoch Smith, R. E. 1876.

Five Years in Japan. By J. L. C. Meerdevoort.

Keramic Art of Japan. By G. A. Audsley and J. L. Bowes. London, 1877.

Shell Mounds of Omori. By E. S. Morse. Tokio, 1879.

The Mikado's Empire. By W. E. Griffis. New York, 1876.

Le Jade. Par S. Blondel. Paris, 1875.

Ancient Chinese Vases. By P. P. Thoms. London, 1851.

Majolica and Fayence. By Arthur Beckwith. New York, 1877.

Palissy, the Potter. By Henry Morley. London. n. d.

Porcelaines de Sèvres de Mine. du Barry. Par Baron Ch. Davillier. Paris, 1870.

Histoire de la Faïence de Delft. Par Henry Havard. Paris, 1878.

Ceramic Art in Great Britain. By Ll. Jewett. London, 1878.

Life of Josiah Wedgwood. By Eliza Meteyard. London, 1865.

Guide de l'Amateur de Porcelaines et de Poteries. Par J. G. T. Graesse. Dresde, 1880.

Guide de l'Amateur de Faïences et Porcelaines. Par Auguste Demmin. Paris, 1873.

Marks and Monograms on Pottery and Porcelain. By William Chaffers. London, 1866.

Japanese Marks and Seals. By James L. Bowes. London, 1882.

Marques et Monogrammes. Par Ris-Paquot. Paris, 1874.

Iconographie de la Faïence. Par M. A. A. Maréchal. Paris, 1875.

A Budget of Japanese Notes. By C. Pfoundes. Yokohama, Japan, 1875.

Art and Art Industries of Japan. By Sir Rutherford Alcock. London, 1878.

L'Art Japonais. Par Louis Gonse. Paris, 1883.

The Ornamental Arts of Japan. By G. A. Audsley. 1883. Now appearing.

The Publications of the Japanese Commissioners at the International Expositions of Vienna, Philadelphia, and Paris.

Mrs. Bury Palisser, and Hopper and Phillips' Manuals of Marks.

WRITERS ON ORIENTAL ART.



WRITERS ON ORIENTAL ART.

The earliest description we have of the processes connected with the manufacture of Oriental porcelain is to be found in the valuable letters from a Jesuit Missionary, Père d'Entrecolles, written in 1712 and 1722, and published (Paris, 1781) in "*Lettres édifiantes et curieuses*," copies of which are now rare. The most scientific work that has appeared on the nature of porcelain and its chemistry is the "*Traité des Arts Céramiques*," by A. Brongniart, 1844. The only work which affords any native evidence on the history of Chinese porcelain, and the various places at which it has been manufactured, is the "*Histoire de la Fabrication de la Porcelaine Chinoise*," translated from the Chinese by M. Stanislas Julien (Paris, 1856). In Marryat's "*History of Pottery and Porcelain*" is an extended account of the Oriental fabrics, with some useful chronological notes on the introduction of porcelain into Western Asia and Europe, as well as an abstract of the History of King-te-tching. The marks on Oriental porcelain are given in the various editions of Chaffers' "*Marks and Monograms on Pottery and Porcelain*"; they are also to be found in works published by Dr. Graesse, Mrs. Bury Palliser, and others, as well as in Hooper and Phillips' Manual of Marks.

The most elaborate treatises, however, which have appeared on these subjects are "*Histoire de la Porce-*

laine," by A. Jacquemart and E. Le Blant (Paris, 1862), and "Histoire de la Céramique," by A. Jacquemart (Paris, 1873). These works contain minute descriptions of the various kinds of Oriental porcelain, written by one who could fully appreciate their merits, and who has bestowed great pains upon their investigation. With many of the conclusions of this talented writer (whose recent death we all have to deplore) we regret to say that we are unable to agree; but both works possess great value, and are illustrated by exquisite engravings due to the artistic skill of M. Jules Jacquemart.

The pottery and porcelain of Japan forms the subject of a richly illustrated work recently published, entitled "Kêramic Art of Japan," by G. A. Audsley and J. L. Bowes.

Notwithstanding, however, the numerous works that have been published, it is probable that we have as yet but an imperfect knowledge of the age, history and meaning of much that appears in collections of Oriental porcelain; and until some European, residing in China, well versed in the subject, and well acquainted with the Chinese language, has obtained access to the stores of native collectors, we shall be to a certain extent working in the dark.

In 1171 we first find any distinct mention of porcelain out of China. In that year Saladin sent to Nur-ed-din as presents, forty pieces of Chinese porcelain. Marco Polo, travelling in 1280, visited one of the sites of the porcelain manufacture, and mentions that it was exported all over the world. It is probable that he may have been the means of calling the attention of his countrymen to this production of the far East. Many other notices from travellers of the 14th and 15th centuries

might be cited. It was probably through Egypt that it reached Europe; at any rate, a present of porcelain vases was sent by the Sultan of Egypt in 1487 to Lorenzo de Medici. To the Portuguese is no doubt due the first direct importation of Chinese wares into Europe, in which they were followed by the various India Companies of Holland,^r England, France, Sweden, &c.

CHINESE SECTION.

POTTERY AND PORCELAIN.

PÈRE D'ENTRECOLLES.

Père d'Entrecolles, Missionary of the Society of Jesus, arrived in China in 1700, whence he wrote letters from Jao-tcheou, in the province of Feou-learn, and King-te-tching, the imperial factory of porcelain. He writes under date of Sept. 1st, 1712, that while his curiosity would not have led him to study the subject of the production of porcelain, he feels that it may be of service to Europe, and therefore avails himself of his opportunities. He not only has converts among the merchants, but also among the workmen themselves, and collects all the information which they can give him, keeping them continually on the watch.

"The town of King-te-tching," he writes, "is only three miles distant from, and a dependance of Feou-learn, which is a dependance of Jao-tcheou. A law exists in China that each city shall preserve in writing, the history of the province in which it lies. This history is to include the situation, extent, limits and nature of the country, together with the most remarkable places, manufactures, the manners and customs of the inhabitants, the persons who are distinguished in arms, in letters, or for great probity. Remarkable women even are recorded; for instance those who, through attachment for their deceased husbands, remain widows. The Mandarin frequently

revises this history, and adds or eliminates as he thinks proper. A strict record is kept of all merchandise exported or imported.

The annals of Feou-learn record, that beginning with the Emperor Tang-ou-te, of the dynasty of the Tangs (A. D. 442), workmen in porcelain have furnished objects to the Emperors, and that one or two Mandarins were sent from the Court to overlook their work. A description is also given of the multitude and variety of the habitations of the workmen who make this Imperial porcelain, showing that its manufacture must have reached at this early date considerable perfection. The name of the inventor is not given, nor are the experiments or chance which led to its discovery. Originally, says the annals, porcelain was of an exquisite white, without defects. The objects produced, which were exported into other kingdoms, were known as "The precious jewels of Jao-tcheou." And further on we read: "The beautiful porcelain which is of a brilliant white, and of a celestial blue, all comes from King-te-tching." That from other factories is very different, both in color and quality.

Aside from the numerous works of pottery made everywhere in China, and which are never called porcelain, there are several provinces as Fou-Kien and Canton, where porcelain is made. But strangers cannot be deceived by these products. That of Fou-Kien is always of a snow white, without brilliancy, never decorated with other colors. All the materials used at this manufactory were transported by enterprising workmen from King-te-tching, under the idea that they would reap a rich harvest from the commerce with Europeans at Emouy ; but they were never successful.

The present Emperor also brought workmen and all

the materials for the manufacture of porcelain to Peking; they neglected nothing to make a success under his orders, but all their endeavors were in vain. Possibly reasons of interest may have influenced them, but certain it is that now King-te-tching alone sends forth its porcelain to all parts of the world; even Japan sends there to purchase.

King-te-tching only needs to be surrounded by walls to receive the name of a city, and to be compared with the largest cities of China. Towns called *tching* are few in number, and are such places as have great frontage and large commerce. They are never surrounded with walls, perhaps in order not to limit their growth as well as to facilitate embarking and disembarking merchandise. It is estimated that the population numbers over one million, that each day are consumed over ten thousand "charges" of rice and more than a thousand hogs. There are large merchants whose factories and houses occupy an immense space and contain a multitude of workmen.

The town extends more than three miles along the bank of a splendid river, and is not, as you might imagine, an indiscriminate mass of houses. The streets are laid out and cross each other at regular intervals; every inch of ground is occupied, in fact the houses are too close and streets too narrow; in crossing them you think you are at a fair; on every side you hear the cries of the street porters making their way through the crowd. You see many temples with idols built at enormous expense.

Living is much more expensive at King-te-tching than at Jao-tcheou, because everything has to bear the expense of transportation, even to wood burnt in the furnaces. Nevertheless, King-te-tching is the asylum for numberless poor families, who cannot subsist in the neighboring

towns, for here employment can be found for young and old, weak and strong; even the blind and maimed can make their living grinding colors. In ancient times, says the history of Feou-learn, there were only three hundred porcelain furnaces at King-te-tching; now there are at least three thousand. Frequently fires occur, and therefore the God of Fire has many temples, the present Mandarin having built one. Not long since eight hundred houses were burnt, but the large profit the owners had realized from renting them caused their speedy reconstruction.

The town is situated in a plain surrounded by high mountains; the one to the east, against which the town is built, is outwardly in form of a semicircle; and from the two adjacent mountains issue two rivers which unite. One is small, the other very large, and their confluence forms a magnificent port over three miles in length, in a vast basin wherein the river loses much of its velocity. Frequently in this large basin are moored two or three rows of barks. In entering the port your sight is greeted with immense volumes of smoke and flames, which mark the outlines of the town against the crescent of mountains in the background, whose relative position may perhaps be the reason that King-te-tching has surpassed all other localities in the production of porcelain.

The policing of King-te-tching is admirable. It is governed by a Mandarin, who appoints one or more chiefs in each street according to its length; each chief appoints ten subordinates, each of whom is responsible for ten houses. The least disorder not immediately suppressed and reported condemns these subordinates to the bastinado, for which the Mandarin holds his chiefs strictly responsible. Each street has barricades which are closed at night, and guarded by a citizen who will admit no one

without the password. The Mandarin of the town makes frequent rounds, and occasionally the Mandarin of Feou-leam accompanies him. Strangers are not allowed to sleep in the city, unless at the house of a resident friend, who is held accountable for their conduct.

Porcelain in China is generally called *tseki*. It is composed of two kinds of earth, the one called *pe-tun-tse* (a quartzose feldspathic rock), and the other *kao-lin* (a hydrous silicate of alumina). These two materials are brought down the river in little flat-bottom boats, after having been made into bricks. The *pe-tun-tse* is transported some eighty miles, and the best quality is of a greenish hue. It is pounded into a fine powder in immense mortars. The *kao-lin* is found in mines in lumps of about the consistence of damp clay. The *kao-lin* gives the element of strength, and in this connection one of my Chinese friends tells me the English or the Dutch (the Chinese name being the same for both) carried home some *pe-tun-tse* alone, thinking to make porcelain. Of course they failed, and my friend laughingly said, "They tried to produce a body in which the flesh would stand without bones."

Other barks also arrive at King-te-tching, laden with a white liquid called *yeou* (oil), although *tsi* (varnish) would better apply, which is made from a very hard stone. It can be produced from the same stone as the *pe-tun-tse*, selecting pieces having green spots. The history of Feou-leam says the best stone for the oil has spots the color of cyprus leaves, or is of a brown color, with reddish spots like toad-flax. To this, reduced into powder, is added one per cent. of a mineral resembling alum, called *che-kao*. *Yeou* is always mixed with ten per cent. of an oil made from the cinders of quicklime and

ferns burned together. Formerly persimmon wood was also burnt with the lime, but this has become so scarce it is no longer used, which, perhaps, is one of the causes of the superiority of the ancient porcelain. Merchants who sell the yeou frequently cheat by making it from other substances, and some manufacturers use even thirty per cent. of oil made from cinders, but their products are very inferior.

They say a porcelain object when finished has passed through the hands of seventy workmen. Large objects are made in two pieces, joined with the same paste moistened, and the joint polished inside and out with a knife. In this way handles, ears, and other attachments are also made and put on. Pieces of very complicated forms, like animals, grotesques, idols and beasts, ordered by Europeans, are made in several pieces.

Flowers and ornaments not in relief, but which appear to be engraved, are generally made with stamps and moulds. Separate figures in relief are also pasted on. I have seen a complicated piece copied by covering it in sections with moulding clay, which was then withdrawn and dried before a fire. Into these moulds the porcelain paste was introduced and hardened by holding it before the fire. The different pieces were then joined, polished, finished with the engraver's tools, and the mouldings in relief added. Then the varnish (*sic*) was applied and the piece baked, after which the object was painted, gilded, and finished by a second baking. To fill large European orders a number of moulds are made to expedite the work.

The Hoa-pei (porcelain painters), as a rule, are not above the common workmen. All the science of these painters, and in general of all Chinese painters, is not

founded upon any principle, but consists merely in a certain routine, aided by a limited imagination. They totally ignore the beautiful laws of this art. And yet they paint flowers, animals, and even landscapes on porcelain, fans and lanterns which are much admired. The work of painting is divided in the laboratory between a large number of workmen. One has the duty of making the first circle in colors near the edge of the piece ; another traces the flowers ; another paints them ; a fourth paints mountains and water ; a fifth birds and other animals. Human figures are generally the worst treated. However, the reproduction of landscapes and colored plans of towns brought from Europe to China, will not permit us to sneer much at their execution.

In the matter of colors for porcelain they have a great number. In Europe we generally see only a bright blue on white ground (blue and white), whereas they have a great variety. I have seen some pieces where the ground resembled that of our burning mirrors. They make some of a solid red and of different shades and appearances, those of oily red and red soufflé having the appearance of being stippled. When these pieces are successful, which is very seldom, they are highly prized and command a large price. There are also objects on which landscapes are painted in many colors and highly relieved with gilding ; these are made very beautiful if you are willing to pay a large price, but ordinary pieces of this kind are not to be compared with their blue and white. The annals of King-te-tching say that in ancient times the people only used white porcelain ; this was probably because at that time the stone was not yet found near Jao-tcheou from which the blue is made. That now used for fine pieces comes from a great distance and is very costly. It is reported that a Chinese merchant was once wrecked

on a desert coast, where he found more riches than he lost, his find being an azure stone; he built a vessel, loaded it with these stones, brought them home, and never was such a color seen before or since at King-te-tching. He, however, was never able to find his desert coast again.

Whilst the body porcelain is naturally white, and the oil with which they cover it increases this whiteness, still on certain pieces they apply a *surface white* in combination with other color decorations. This white is made from a transparent stone, by calcination in the furnace, and azure blue is produced by the same process. Red is made from copperas. Green is made by adding to an ounce of white lead, and a half ounce of stone powder, three ounces of what I think to be the purest scales from hammered copper. Green thus prepared becomes the matrix of violet, which is produced by adding white. Yellow is made of seven parts of white and three of copperas. These colors do not appear upon their application, but only after the second baking.

The oil red is applied by mixing it with the ordinary glaze and a glaze made of a white stone. Perfect pieces of this color are very highly esteemed; when struck they do not ring. The red soufflé is made by using a little tube, one end of which is covered with a very fine gauze. This end is gently dipped into the prepared color, the artist approaches it to the object, and blows through the other end; this is repeated until the desired effect is produced. Such objects are very rare and highly esteemed. Black porcelain is also esteemed, and resembles our burning mirrors. Decoration in gold upon the black enriches the color. Objects are also made surrounded by a shell of open-work, forming one with the interior, which is solid.*

* Imitated at Sèvres and other places.

I have also seen porcelain decorated with Chinese and Tartar female figures in the most exquisite manner, resembling enamels.

If no other glaze is used than that made from white stones, crackle ware is produced. The glaze gives a grayish white color by itself, but it will produce the same effect on pieces which have been colored. Gold is applied with a brush, after mixing it with white lead in gummy water. We also find pieces where the decoration is outside the glaze, which is sometimes to hide defects.

Before applying the glaze the surface is smoothed to a polish with a very fine-haired brush which is passed and repassed over it. Great skill is required in glazing very thin porcelain. The interior is first sprinkled with the glaze and allowed to dry, after which the outside is dipped into it. The bottom is left solid during this operation; it is then hollowed out on the wheel; a colored circle, and sometimes a Chinese letter, is painted upon it, the glaze is applied and the piece is ready for the furnace.

Objects for export to Europe are mostly made upon new models, often whimsical and difficult to execute. If they are not a success the European agents will not receive them, and the factory has to make the loss, for the Chinese will not purchase objects so different from their taste. Some of those made for the Chinese are also very remarkable; the Heir Apparent ordered a large lantern made in one piece of openwork, so that when a lamp was placed inside it illuminated the whole room; a little musical instrument like an organ, about a foot high, with fourteen pipes, was made for him, but it was not a success. They make flutes and flageolets successfully, and a musical instrument formed of little plaques of porcelain, giving different sounds when struck. They also make grotesque

animals, turtles, ducks, etc. I saw a painted porcelain cat with eyes formed of holes through which shone the light from a lamp. Many statues of the goddess Kouan-in holding a child in her arms are made. Also objects of porcelain which are very delicate and thin, but nevertheless are moulded into most difficult shapes; to effect this, the interior is shaped on the wheel, glazed and baked; the object is again placed on the wheel, and the exterior worn away by grinding until the desired thinness is obtained, when the exterior is also glazed, and the piece is painted, glazed and again baked. Attempts to make plaques larger than one foot square, for European orders, have always failed.

It is related that once upon a time an Emperor ordered objects of porcelain to be made of a design which he furnished; it was found impossible, but as the Emperors of China, during their life-time, are the most redoubtable of the Chinese divinities, and always believe their every wish must be satisfied, the Mandarins redoubled their bastinados, and the poor artists redoubled their efforts. But it was all in vain, until, finally, one of the poor wretches, despairing, threw himself into his furnace and fed the flames with his brain and body. The sacrifice was accepted, and when the furnace was opened, the porcelain had assumed the desired design, and the Emperor was satisfied. The poor wretch became a hero, and in the shape of an idol now presides over all the porcelain factories.

The Chinese are great antiquarians; indeed, in this respect they surpass all other nations. The date-marks upon porcelain can scarcely be relied upon, and much of the finest antique porcelain bears no mark at all. Hence the antiquarian has to rely upon his taste, and select his gems by form and color. Of course tradition bears its

value; thus the smallest object of pottery used by the Emperors Yao or Chun, who reigned several centuries before the Tangs, under whom the first porcelain was made for the Emperors, commands in China an enormous price. The annals of King-te-tching inform us that in ancient times, as at present, objects of various prices were produced; thus certain urns are mentioned, each of which was sold for fifty-nine taels, that is eighty écus.*

The present Mandarin of King-te-tching, who is my friend, yearly presents to his protectors at the Court, beautiful specimens of old porcelain, for the making whereof he possesses great talent. I had recently presented to me a small plate, on which was a painting of a crucifix between the Virgin and Saint John, and I am told that such paintings were made to fill orders from Japan, but these orders had ceased since 1696.

Mending porcelain is an important business in China; workmen use the diamond to drill little holes, and with a very thin brass wire they draw the pieces together so that the break is hardly noticeable.

One of the favorite colors of ancient times, now counterfeited, is the sea-green, made by mixing with the glaze an oil made from a yellow stone. Pieces so decorated are made very thick, and after baking they are thrown into a greasy bouillon made from capons and other meats, where they are again baked; after this, for a month or more, they are left in the filthiest sink that can be found, and then they come forth three or four hundred years old!

The Chinese renew the brilliancy of the gilding on porcelain which has become dull from the lapse of time, by

*An écu equals \$1.20, and in 1712 had about five times its money value of to-day; this would make each of these objects cost about \$500.

moistening it with clear water and rubbing it with an agate, being careful always to rub in the same direction. To strengthen the edges of porcelain dishes the potter applies with a brush a coat of glaze in which is mixed a proportion of the pulverized charcoal of bamboo; this preparation when applied has a grayish appearance, but after burning becomes perfectly white.

I have already spoken of the Red Soufflé, but neglected to mention the Blue Soufflé, which is much easier to produce. Nor is there any reason why gold and silver should not be treated in the same manner except the expense.* Not long since the Emperor ordered some pieces so thin and delicate that they could not be dipped into the glaze; they were handled with cotton for fear of breaking, and the glaze was blown upon them after the manner of the Soufflé.

Quite recently a new material has been found which can be substituted for the kaolin; it is called *hoa-che*, and is a kind of stone, or rather chalk, of about the consistence of hard soap. Porcelain made of this material is very expensive; it is very brittle and difficult to bake, but offers the most desirable surface for the artist to paint, and retains the colors perfectly. For this reason frequently the body of the piece is made of common material, and a surface of this *hoa-che* is obtained by dipping the piece into a liquid preparation of it. It is also much lighter than the ordinary porcelain. Where the kaolin costs but twenty sous the *hoa-che* costs an écu. Another use of this *hoa-che* is very beautiful in effect; after it is prepared in little grains it is diluted with water to the consistence of paste, and by means of a brush, tracings are made on the surface of objects before they are glazed; after glazing and baking

* Gold has been so treated.

these tracings appear of a different whiteness from the body of the porcelain. This whiteness of the *hoa-che* is called *siam-ya-pe*, or white of ivory. The *chekao* (a mineral resembling alum) is used in the same way for white tracings, but it cannot, like the *hoa-che*, be substituted for kaolin in the body of the porcelain.

I have not yet spoken of a glaze called *tse-kinveou* (brownish gold): it would be better named the color of bronze, or of coffee, or of dead leaves; this glaze is a new invention.

Sometimes cups are made with the ordinary clear glaze inside and the *tse-kin* (color of dead leaves) outside; also vases and cups where the principal glaze is the *tse-kin*; but medallions are left to be otherwise decorated by applying pieces of wet paper to the object, dipping the object in the *tse-kin*, and, when nearly dry, removing the paper; this leaves white medallions, which are decorated to suit the fancy, then the object is glazed and baked. I have seen this year porcelain of an olive color which is quite à-la-mode. It is called *long-tsivem*.

A kind of glaze called *tsoui-yeou* produces immeasurable little cracks over the surface when applied alone; it renders the object very brittle and destroys its ringing tone when struck, but when mixed with other glazes it does not. The mixture used to produce the peculiar black resembling our burning mirrors carries its own glaze and requires the most careful baking; pieces of this color must be placed in the very centre of the furnace where the heat is most uniform.

It seems to be the general belief that the production of the violet color and the art of gilding date back to 1700* only.

* There are many specimens of both violet color and gilding of an earlier date in the Museum at Dresden.

In the present year (1722) on account of orders from Europe, vases have been made more than three feet in height. This had been considered impossible ; they were made, however, in three pieces, which were so nicely united that you could not discover the joints. Of eighty vases of this description placed in the kiln only eight succeeded, the others proving a total loss.

I have been presented with a piece called *yao-pien* (transmutation) which is the result of either a defect in preparation or an excess of heat. Whilst this piece is a rejected one it is to me very beautiful, resembling agate, and no doubt at some future day what was this time produced by chance will be made by design.

On some few pieces, generally common ones, colors are applied without glaze, or over the glaze. Indeed, some colors are always applied thus (as vermilion) which cannot be baked, because they disappear when subjected to heat. When it is desired to cover the entire surface of a vase with color, it is simply dipped into a solution of the proper preparation. Some artists, after the color is applied, trace figures with a long needle on the dried surface, and, after being glazed, these figures seem to have been painted.

There is not as much work as you would imagine in producing reliefs of flowers, dragons, or other figures ; it is done by tracing on the flat surface with a graver, the desired figures, then the intermediate clay is removed, the object is glazed and the figures appear in relief. Attempts have been made to use the black Chinese ink in painting, but without success, for after baking, the objects were found perfectly white."

M. STANISLAS JULIEN.

"The ancient chronicles of China cite the Emperor Hoang-ti as the inventor of pottery, and date his reign from 2698 B. C. During this reign there is mention of an Intendant of Potteries named Ning-fong-tse. Later we read that in the year 2255 B. C., Chun, before becoming emperor, made pottery near Thing-thao, in the province of Shan-tung. Authors generally agree that vases of burnt earthenware originated during this reign, and continued to be called *Pi-khi* (vases of pottery) until the Thsin and Han dynasties (249-202 B. C.) From this and other facts we conclude that porcelain was not invented until the time of the Han dynasty, when it appeared in the Sin-p'ing district, founded 185 B. C. by the Emperor Kao-ti. For many years progress in its manufacture seems to have been very slow, as the next mention we find is under the first of the Weï (A. D. 220-264), when it reappeared in the province of Shen-se and at Lo-yang in Hou-nan. We find under the Tsins (A. D. 265-419) the bare fact mentioned that for a long time porcelain had been made at Wen-Tcheou-Fou, in the province of Tche-Kiang.

The next date is that of A. D. 583, in the period Tchite of the Tchins, when a royal decree ordered the inhabitants of the country where is now located King-te-tching, to make porcelain for the use of the Emperor. From this period (A. D. 583) we find mentioned the names of workmen and their specialties. Thus Ho-tcheou (A. D. 581-618) was celebrated for making vases of a beautiful green color, and the works of Thao-yu were called "vases of artificial jade."

In the period Wou-te (A. D. 621), Ho-thong-thsou made porcelain, with a white matrix, as brilliant as jade.

He was from Sin-p'ing in Ho-nan where the first porcelain was produced. For over three centuries we find no mention of any special artist; but about A. D. 954, in the period Hien-te, the Emperor Tchi-tsung issued an order that porcelain for the use of the palace should be made the color of the "sky seen between the clouds after rain"; hence the name Yu-kouo-thien-tsing (blue of the sky after rain). Chinese authors say this porcelain was "as blue as the sky, brilliant as a mirror, thin as paper, resonant as a Khing (musical instrument), polished and brilliant, and was distinguished as much for the fineness of its crackle as for the beauty of its color." These objects were so much prized in after years that the fragments were worn as amulets.

About the same period (A. D. 960) lived the brothers Tchang. The elder used a brown paste and made objects very thin of dark and light blue; the enamel, beautifully crackled, had the appearance of fishes' eggs. During the years 1275 to 1279, under the Tsongs, artists tried in vain to imitate his work. The younger brother made pieces of the same colors, but not crackled; his enamel appeared to be sprinkled with dew. Also under the Tsongs, from 960 to 1126, a family called Tseou made vases "thin, brilliant, of a surpassing whiteness, and of pure and graceful forms." During the same period, at the village of Liu-ling, lived a father and daughter named Chu, who produced curiosities in porcelain, such as birds, animals, etc. The daughter surpassed the father in workmanship. When the Tsongs passed into the south, a magistrate established, in the new capital, about 1127, a small factory, and made from a very pure clay pieces brilliant in color with transparent enamel. From 1260 to 1349, under the Mongols, we find only one maker men-

tioned, Pong-kiun-pao. He was at first a gilder, but afterwards made very thin vases of a solid blue color, in imitation of the ancient Ting vases.

We now reach the Ming dynasty (1368-1649), under whom all the arts attained their highest development. The first artist mentioned is Lo, in the period Siouen-te (1426-1435), who made vases decorated with cricket fights, a favorite amusement of the period. Two sisters, named Sieou, also produced the same subjects with the sketches engraved in the paste. Under Tching-hoa (1465-1487) vases and jars decorated with peonies and chickens were produced, and the supply of azure blue was exhausted. Under Tching-te (1506-1522) cobalt blue, "Hoeï-tsing,"* was discovered, and, by command, used to decorate the imperial porcelain. This Hoeï-tsing was crushed with hammers. The finest quality showed bright red spots, the second little silvered flakes. It was also called "great blue" and "blue of the head of Buddha."

From 1522 to 1572 the work of a very skilful artist, Tsoui-kong, was much sought after, who imitated successfully the old pieces. But the master imitator was Tcheoutan-thsiouen, who lived in the reigns of Long-khing (1567-1572) and Wan-li (1573-1619). He worked at King-te-tching, and produced a great variety of objects, much sought after by connoisseurs and bought at fabulous prices. It is told of him that, once on a visit to Thang, the president of the sacrifices, he asked permission to examine carefully a tripod of porcelain which Thang valued very highly. He measured it carefully with his hands and took impressions of its surface upon sheets of paper, which he hid in his sleeve. Six months after he revisited

* The Chinese have never disclosed the nature of this beautiful color.

Thang, and drawing from his sleeve a tripod, said, "Your excellency possesses a tripod in white porcelain by Ting; I also have one." Thang was overwhelmed with astonishment, and assured himself the two were the same in every detail. Tcheou then added, "I do not wish to deceive you; mine is but an imitation of yours, made from measurements taken six months ago." Thang, satisfied of the truth of this, bought the reproduction for sixty dollars, and very soon afterwards sold it to Thou-Khieou for fifteen hundred.

In the period Wan-li (1573-1619) lived another distinguished imitator of ancient works, Ngeou-Kong. His principal reproductions were the crackled porcelain of the elder Tchang, the "porcelain of the Magistrates" and of Kiun. In the same period lived Ou-in-tao-jin (the old man who lives in retreat). He made bowls decorated with diapered clouds, and the celebrated egg-shell porcelain cups, each of which weighed only three-quarters of a gramme, and commanded any price. He also made vases called *Ou*, of a pale blue, and imitated the works of the Tchangs, excepting the crackle. He also made vases which were purple in color or like "dead leaves." Under every piece he signed his full name. In the period Khang-hi (1662-1722) an oily clay was used which produced very thin porcelain. The principal colors of its decoration were green of the serpent's skin, eel yellow, azure blue, and yellow spotted. Vases were made on which the enamel was of a pale yellow, pale violet, pale green, and of red or blue soufflé. In the period Yong-tching (1723-1735) they made at King-te-tching, pieces of the color of an egg as brilliant as silver, also of solid blue and other colors, and a few were decorated with flowers in relief, engraved or flat.

The period Keen-long (1736-1795) commenced the

renaissance of Chinese ceramic art. In 1728 Thangkong was employed under the Assistant Director Nien at King-te-tching and very soon infused new life into the work. He produced excellent imitations of ancient pieces, and invented many new ones. His colors were pure and his execution excellent. Understanding thoroughly the nature of the stones and clays, he used them to the best advantage. He had also mastered the intricacies of the ovens, and reproduced all the fine enamels. The Emperor by special decree directed him to illustrate the manufacture of porcelain by twenty-two plates.

MARKS.

The Chinese use two distinct kinds of marks on their porcelain: the one, the Chinese name of the reigning emperor, thus fixing the date of production between certain years; the other, individual marks, such as the name of the producer or the factory, the destination of the object, or some figure or outline in color or enamel. When Tchin-tsong founded King-te-tching he ordered that every piece of porcelain should bear under its foot the words *King-te-nein-tchi*, "made in the years King-te." This was continued for over six hundred years, when suddenly, in 1677, Tchang-tsi-tchong, the prefect of the district, forbade the custom, saying, in case an object were broken, the emperor whose name, or the saint whose likeness, was painted upon it, would have just cause to consider his memory profaned.

Under the Ming dynasty from 1368 to 1649, the manufacture of porcelain made great advances, the emperors of this dynasty being all patrons of art. Under this dynasty, in the reign of Siouen-te (1426-1435), the finest objects were made. Belonging to this period we find vases whose

handles are decorated with a red fish. An extremely small flower painted in dull color in the centre of a cup is a mark of this period. Combats of crickets were a favorite decoration; a young girl is especially mentioned who incised these combats beautifully in the paste. Enamelled vases were made to imitate the skin of the *Kio* (a kind of sweet orange). When this is found in the bottom of white cups it is of dull color. An extremely small phoenix and dragon in enamel are found on objects made in this period for the use of the Emperor, also some pieces on which are represented cock fights.

The reign ranking second among the Mings for its porcelain is that of Tching-hoa (1465-1487). To this period belong objects on which are painted a hen with her chicks, cock fights, a kind of grasshopper, also objects with grapes in enamel or with the fruit of the nelumbium speciosum, indicating vases for wine; and objects with the flower peony-moutan sheltering a hen with her chicks. This flower was also painted on porcelain of Ting-tcheou made in the first years of the Tsongs (960-1279).

The porcelain of the Mings ranking third was that of the period Yong-lo (1403-1424). To this period belong vases with two lions rolling a ball, painted in the centre. These pieces were of first quality. Paintings of two mandarin ducks in the centre of bowls or cups indicated pieces of second quality. A flower painted in the centre of cups marked pieces of third quality.

The reign ranking fourth is that of Kia-ting (1522-1566). The word "wine" written in the centre of a little white cup indicated that it was used by the Emperor, and the words "decoction of jujubes," and "decoction of ginger," were a mark of the poorest quality used by the Emperor. The word "tea" in enamel on the centre of

a white cup marked it for the Emperor's use, and was of first quality.

To the reign of Long-khing (1567-1572), and to that of Wan-li (1573-1619), belongs the porcelain decorated with paintings called *Pi-hi*, or jeux-secrets. Also vases of the fine red color *tsi-hong* (red of the sky after rain, or of the sacrifice known as "sang-de-boeuf"), in imitation of the beautiful tsi-hong color of the Siouen-te period (1426-1435). These vases are called *Long-yao*, because they were made at the imperial factory in the district of Long. This color has been much imitated recently. The words "leaves of the bamboo," or "bouquet of epidendrums" were the mark of vases painted with blue flowers at King-te-tching during this period; the four characters signifying the "Monk living in retreat," mark vases made during this reign. Other date marks of the Mings found on porcelain are Hong-wou (1368-1396), and Tching-te (1506-1521).

FACTORIES.

The names of no less than fifty-seven manufactories of porcelain are recorded. In locating these we will use the eighteen provinces into which the Central Empire was divided under the reign of Keen-long, thirteen of which contained porcelain factories.

I. In the province of Chi-li there are five. The most important is that of Ting-tcheou, founded soon after A. D. 960, under the Northern Tsongs (960-1126), during which period the best work was made. Pieces are mentioned in colored enamels, white, red, violet, and black, also pieces with tracings of flowers and in solid colors.

II. In the province of Kiang-nan five factories are named. The only one worthy of mention is So-tcheou,

where they imitated with great success the porcelain of Ting-tcheou, also of the period of the Tsongs.

III. In Shan-se there were five, none of which produced very fine work.

IV. In Chan-tong there were two factories.

V. In the province of Ho-nan there were thirteen. Four of these, Hoai-khing-fou, Chen-tcheou, I-yang, and Teng-fong, were founded during the period of the Mings (1368-1644), and are still producing. At Sin-p'ing the first recorded porcelain was made between the years 185 B. C. and A. D. 88. The finest objects were made at Jou-tcheou, founded under the Tsongs. It was here they produced the "blue of the sky after rain."

The accepted judges of to-day rank the different porcelains as follows:

1st. Tch'ai-yao (Tch'ai being the family name of the Emperor Chi-tsung), or porcelain of Tch'ai made at Jou-tcheou in Honan.

2d. Jou-yao, or porcelain made at Jou-tcheou in Honan.

3d. Kouan-yao, or porcelain of the magistrates, made at Hang in Tche-Kiang.

4th. Ko-yao, or porcelain of the eldest son, that is of Tchang, the eldest.

5th. Ting-yao, those of Ting-tcheou.

The Tch'ai porcelain has long since passed out of commerce, and if even a fragment is found it is worn as an amulet. An ancient author says of it: "The fragments of Tch'ai porcelain dazzled your eyes like precious stones, and its rays turned aside the fatal arrow." Such expressions indicate how much this porcelain was esteemed.

VI. In the province of Shen-se were four factories, of which, Yao-tcheou was noted for its white under the Tsongs, and Hien-yang furnished porcelain to the emperors under the Weï (A. D. 220-265).

VII. In the province of Kan-souh there was one factory.

VIII. In the province of Tche-keang were eight, among which were noted: A factory in the department of Hang-tcheou-fou, where, between the years A. D. 1004-1126, were produced the celebrated crackled pieces known as Kouan-yao, or for the use of magistrates. A factory in the department of Chao-hing-fou, at Yu-yao, made the celebrated porcelain called Pi-se-tse or porcelain of hidden color, because it was made for the emperors alone (A. D. 1127-1279). The factory of Long-thsiouen, which existed in 960, and where, in 1279, Sing-eul produced his work. This factory gave its name to the very celebrated porcelain called Long-thsiouen, which is now imitated at King-te-tching. Père d'Entrecolles says "this porcelain was mentioned as olive green, but some of it is certainly light and dark blue."

IX. In the province of Keang-si there were eight factories, only one of which produced remarkable work. This was King-te-tching, where porcelain was made as early as A. D. 583, and which in 1004 was named "The Imperial Factory." It soon outstripped all competitors, and to the present day has continued to produce every variety of work from the cheapest to the most expensive.

X. In the province of Sze-chuen only one factory is mentioned.

XI. In the province of Fuh-keen we find two barely mentioned, one founded previous to 1200, and the other about 1368.

XII. The province of Kwang-tong had but one factory.

XIII. The province of Hou-nan had two, one established about A. D. 960, the other previous to A. D. 618.

PORCELAIN MADE AT KING-TE-TCHING.

The History of Feou-leam, the district to which King-te-tching belongs, published first in 1325, in enumerating the quantity of porcelain furnished to the Emperor, recounts that there were thirty-one thousand dishes with flowers; sixteen thousand white plates with blue dragons; eighteen thousand four hundred cups for wine, with flowers and two dragons in the clouds; eleven thousand two hundred and fifty dishes of white ground with blue flowers, and dragons, holding the two words Fo (happiness) and Cheou (longevity) in their claws. King-te-tching porcelain has been celebrated since the time of the Tchin (A. D. 557-588), or nearly four hundred and fifty years before it was made the imperial factory.

The vases, which were made of selected material and finely finished at King-te-tching, were called Kouan-kou or "vases of the magistrates." They are of various shapes and decoration, and have received this name because they are worthy of being used by the magistrates. These objects must not be confounded with the "porcelain of the magistrates," made under the Tsongs (A. D. 960-1279), at Pien, in Ho-nan, and at Hang, in Tche-keang. Objects are made at King-te-tching which are first glazed on one side, after which the body paste is ground to exceeding thinness, and even in some cases entirely removed, thus leaving an object formed of glaze alone. Objects made for the foreign market are known as "objects of the seas," and nearly all are sent to Canton, to be sold to the "devils of the seas," by which title Europeans and Americans are known. "The Book about Tea" (Tch'a-king) tells us that yellow cups are not desirable for tea, as they give it a brown appearance.

The year A. D. 583 is the earliest date mentioned in connection with the manufacture of porcelain at King-te-tching. About A. D. 618, Thao and Yo produced objects of thin body, white and brilliant.

The Memoirs called Tsiang-ki tell us that under the Youens (1260-1368) they made vases of a perfect white, without defect, and also of blue. Further on we read that at the same period they had the knowledge of moulding, painting and engraving flowers on porcelain, and made objects for the use of the Emperor, in the interior of which were painted the words "for the palace." These pieces were mostly very thin, with a small base and with mouldings of flowers. There were some, however, relieved with gold or decorated with enamelled flowers. We find mentioned vases, dishes, basins and bowls. The same memoirs mention a black-yellow porcelain which was made about the same time at Hou-tien, a village situated on the same river as King-te-tching.

In the Ming period Hong-wou (1368-1398) we find mentioned thin porcelain of a fine oily paste which was in color white, blue or black; bottles and bowls, blue-black, relieved with gold. It is related that before decorating and glazing, the crude objects were allowed to stand for a year.

Period Yong-lo (1403-1424), the following: Objects pure white, and others engraved with a point; vases for sacrifices; cups with turned-down edges, inside of which are painted two lions playing with a ball (mark of the best quality); the same with two birds (very good); the same with flowers; also cups with flowers painted on the outside in very dark blue, and vases of a brilliant red.

Period Siouen-te, the best Ming period (1426-1435). We find mentioned objects decorated with blue flowers

(pale blue preferred) ; others with various colors ; cups red in color with a red fish upon the handle ; salt cellars, and little vases whose cover was topped with a little knot of bamboo ; vases of the color of the blue of the sky ; white cups for tea, as brilliant as jade, on the interior of which were painted in dull color two flowers surmounted with a dragon and a phoenix, extremely small and delicate, and under the flowers was written "Made in the period Siouen-te of the great dynasty of the Mings"; the surface of these cups was granulated like a chicken's skin or an orange peel ; vases shivered like broken ice, and others with red streaks like eel's blood ; bowls decorated with crickets ; vases of a solid brilliant red, and of the red of "the precious stone." There are still to be found a few objects of this period.

Period Tching-hoa (1465-1487). The porcelain made during this reign was specially noted for the beauty of the enamelled painting, and the artists of this period in drawing and coloring have never been surpassed. We read in a Chinese work that the Emperor Chin-tsong (1573-1620) owned two cups of this period which he valued at seventy-five hundred francs.

Period Tching-te (1506-1522). Cobalt blue was introduced from the "Mussulman barbarians from the West," and which was valued at double the price of gold. The color it produced gave an antique tone of great beauty. Its Chinese name is Hoeï-tsing, and in the period Kia-tsing it was used to produce very beautiful objects of very dark blue. In this and the previous reign the forms and designs had greatly deteriorated.

In the Ming reigns of Long-khing (1567-1572) and Wan-li (1573-1619), the Hoeï-tsing blue gave out and the material at Jao-tcheou was exhausted. The public taste at this time becoming licentious, but little good

work was produced. Between the years 1522 and 1572, Tsoui-kong, whose work we have previously described, lived at King-te-tching. Between the years 1567-1619, Tcheou-tan-thsiouen and Ou-kong or Ou-in-tao-jin also worked there, and have been previously referred to. In the last years of the Mings, in a street called the "Little South street," small objects, very thin, but strong, were produced; also little white bowls of a blueish tint occasionally decorated with bouquets of epidendrams or leaves of bamboo, and small pure white cups, shallow, with depressed edge, in imitation of the bowls made under the Tsongs. These cups are highly prized at the present day.

They also had at King-te-tching, under the Mings, certain ovens which were known as "ovens for large jars decorated with dragons." Of such jars we find mentioned the following: blue jars for flowers, on which were painted the precious images of two dragons playing in the clouds; large blue jars ornamented with two dragons in the clouds and with lotus flowers; white jars with blue flowers; large jars decorated with four blue dragons arranged around the vase and playing in the waters of the rising tide; large blue jars for fish; porcelain jars of the color of "little green peas."

Under Yong-tching (1723-1735) of the Thsing dynasty commenced the systematic imitation of ancient pieces and the renaissance of art, both of which were developed under the following reign of Keen-long (1736-1795). The new colors and process introduced at King-te-tching under this latter reign were as follows: European violet enamel; blue enamel called *Fa-tsing*; vases with a browned silver ground; black enamelled ground; brilliant black of Europe; painting with enamel; black ground with European enamel; white flowers on a black ground; gold

drawings on a black ground ; porcelain of the blue of the sky (?) ; enamel which changes in the firing.

All of these new discoveries, and all the good work done in this reign at King-te-tching are due to Thang-kong, who had been employed since 1728 by Nien, the assistant Director, who also personally experimented and supervised the work."

CRACKLE PORCELAIN.

Crackle porcelain is one of the most peculiar productions of the art of the Chinese potter, and has not been successfully imitated elsewhere. Occasionally European pieces assume a crackled appearance ; but this has not been intentionally produced and has been subsequent to the baking. There is a considerable variety in the colored glazes which are thus crackled. Some colors, such as turquoise blue and apple green, seem nearly always to assume a crackled appearance ; others, such as the reds, are rarely affected. The color chiefly selected is a grayish white ; the forms are archaic, and with ornaments in dark brown, occasionally gilt. The crackled appearance, though now always artificial, owes doubtless its origin in the first instance to accident, and at an early period.

Some of the vases of the Tsong dynasty (A. D. 960-1270) are noticed as being crackled. The productions of the two brothers Tchang, who lived under that dynasty, were distinguished by one being crackled and the other not. Crackled vases were called Tsui-khi-yao under the southern Tsung dynasty (1127-1279), and are thus described in the History of King-te-tching: "The clay employed was coarse and compact, the vases were thick and heavy, some were of a rice white, others pale blue. They used to take some Hoa-chi (steatite), powder it, and mix it with the glaze. The vases exhibited cracks run-

ning in every direction, as though broken into a thousand pieces. The cracks were rubbed over with Indian ink or a red color, and the superfluity removed. Then was seen a network of charming veins, red or black, imitating the cracks of ice. There were also vases on which blue flowers were painted on the crackled ground."

A different mode of making the crackles is described in another Chinese work, and is as follows: "After covering the vases with glaze, they are exposed to a very hot sun, and when they have become hot they are plunged into cold water for a moment. On being baked they appear covered with innumerable cracks." The way in which the size of the crackle is regulated seems to be indicated in one of the receipts for making crackle vases, given in the History of King-te-tching, from which we learn that the material of the glaze was to be finely or coarsely washed, according to the size of the crackle required.

We have given considerable space to the translations from Père d'Entrecolles and Stanislas Julien, because they are almost the only authorities we have on Chinese porcelain who compiled from personal observation. Moreover, the letters of d'Entrecolles were of great value to the tentative efforts being made for the production of porcelain in Europe at the time they were written, and his words and the specimens he sent home were among the leading causes of European success. The translations of Stanislas Julien, from Chinese documents, contain a large amount of information, which we have not as yet the means of understanding or verifying. Each year of our intercourse with China, however, adds to our knowledge, and brings us new examples which are described in this work, and thus increases its value as a text-book.

J A D E.

S. Blondel, in his monograph "Le Jade," from which the following pages have been condensed, says :

"Jade (Chinese, Yu), very common in India and China, varies in color from oily white to dark olive green, depending on the amount of oxides of iron and of chrome which enter into its composition. Of all stones it is the hardest and heaviest, being fine-grained and compact in texture. It takes a fair polish, but always preserves an oily appearance both to the eye and to the touch.

Although its ordinary shades are green of many gradations, its classical color is a milky white, almost opalescent; when of this color, its limpidity, its fine texture and hardness, so great that it almost eludes the hand of the workman, render it desirable to be fashioned into pieces of great value. Pale green is likewise selected to shape into vases of all forms, especially such as are to be ornamented with elegant reliefs; it has a uniform and agreeable tint and a close, fine grain susceptible of a high polish. Other greens, darker and duller, marked with molecular freaks and clouds, are reserved for vases of large dimensions and for bracelets. Black jade, also highly appreciated, is sometimes of a solid color, sometimes cloudy, and some specimens recall the crystalline watering of galvanized iron.

In ancient times all travellers in the East have regarded jade as a variety of marble or agate, and many

writers have confounded it with the celebrated Kasch stone or jasper. Orpheus, no doubt, alluded to jade when he wrote of jasper the color of springtime. The distinction between the two stones is quite modern, since in a scientific work about gems and stones published in 1647, nephritic jade is considered a jasper.

One of the principal deposits of jade is at Tai-Thong in the province of Shen-se, but the great supply comes from the City of Khotan, in the canton of Yarkande, ancient Chinese Turkestan.

From time immemorial the Chinese have prized jade especially. The Liki, or 'Memorial of Rites,' a canonical book of the Celestial Empire, in which the Yu is compared to the subtle matter of the rainbow concreted and fixed under the form of a stone, gives a proof of their veneration for it.

The philosopher Confucius, who lived five hundred years before our era, explained to one of his disciples why this stone, endowed with exceptional qualities, had in the ancient times merited to become an object of meditation for the wise and a symbol of virtue. One day Tze-kun, the disciple of Confucius, questioned his divine master as follows: 'Might I ask why the wise men esteem the jade and set no store by the Huen stone? Is it because the jade is very rare and the huen very common?' Confucius answered: 'It is not because there is a great abundance of huen that it has no price, nor is it because the jade is so rare that it is esteemed, but because from the earliest age wise men have compared jade to virtue. In their eyes its polish and its brilliancy represent virtue and humanity, and its perfect compactness and extreme hardness the safeguards of intelligence; the angles of jade, which, seeming sharp, yet do not cut, represent

justice ; the little buttons of jade which hang from the hat or belt as if about to fall, represent ceremony and politeness ; the sound, pure, sustained and prolonged, which it gives forth when struck and which ceases suddenly, represents music ; the impossibility for the bad shades to hide the beautiful or the beautiful the bad, represents loyalty ; the defects, under the surface, yet apparent, represent sincerity ; its lustre, like that of the rainbow, represents the firmament ; its wonderful material, extracted from the mountains and the waters, represents the earth ; cut into Knei or Chu, without other embellishment, it symbolizes virtue ; and the price at which all the world values it symbolizes truth.'

Modern Chinese share with their ancestors in the same passion for jade, and modern Chinese writers use its name figuratively whenever they wish to indicate something very white, very pure, very beautiful or perfect. One of their greatest poets, Li-thai-pe, writes : ' How long for us can last our possession of jade and gold ? A hundred years at most is the term of our longest hope ; to live and to die once, of that we are all assured.'

In a comedy entitled ' The Accomplished Soubrette,' the beautiful Fan-sou makes a charming comparison whilst walking through a park with a friend to whom she recites the following verses : ' The willows shake their silken verdure, whence escape pearls of dew which fall like a rain of stars into this limpid pool. You would think them balls of jade thrown into a crystal fountain.'

In the period Siouan-no there was kept at the palace a standard collection for the shades of Yu, with which all pieces reaching the Emperor were compared. We find mention in the ' History of the Dynasty of the Tsongs,' that in the year A. D. 965, the king of Yu-thian sent

from Khotan his ambassadors, bearing as a tribute to the Emperor five hundred pieces of jade and five hundred pounds of yellow amber, and that this was a yearly tribute.

We also find that the city of Yarkande sends to Khotan each year to be forwarded to Pekin, four or six thousand kilograms of Yu, and in this is not included the pieces so admirably cut and engraved by the lapidaries of the ancient capital of Chinese Tartary, Aksou, nor by those of Kashgar and Yarkande, where working in jade forms the principal industry.

In a work entitled 'The Notices of Khotan,' we read, 'Jade is hard and difficult to work, neither steel nor fire will attack it.' The Abbé Grosier, in his remarkable work on China, also assures us that the tenacity of the fine jades is so very great that to work and polish them the same means are employed as for agate and the precious stones. The more difficult it is to cut the more brilliant is the polish it acquires. As many thousands of days' work would not suffice to finish certain pieces, the workmen for the Emperor succeed each other without interruption in the workshop of the palace, and although they work night and day, it often requires nine or ten years to finish a single piece. The outlay for this labor joined to the expensive first cost of fine pieces, makes them when finished of enormous value. And yet this stone, so dearly bought, will break like glass if allowed to fall.

The process of working jade is thus described by Mr. Summer, a resident of Cambay: 'The stone gem is first fixed upon the steel axis of a lathe, reduced to a generally circular form and then polished, using for this a composition of gum lac and corundum. Vases and other objects are worked upon this lathe to suit the form desired,

and the first polish is given by rubbing upon stones suited to this purpose. The concavities are hollowed out with a countersink whose point is armed with a diamond, little holes are drilled about a quarter of an inch deep all over the surface, giving the appearance of a honeycomb, and then the partitions are broken away; this process is repeated until the required depth is obtained; the final polish is given by the rapid motion of a mould, having the form in relief of the concavities, which is made to revolve in the stone or crystal to be polished; these moulds are of the same composition as the polishing plaques used on the lathes.'

The most ancient objects made of jade are probably the musical instruments called 'Khing,' or sonorous stones, guitars and flutes. Small objects of jade are worn attached to the hat and girdle, the form and proportions of which indicate the rank of the wearer. We also find mentioned objects of great size. Thus in a poem named 'The Measures of Jade,' it is related that Fan-tseng destroys with his sword two vessels of the precious stone, each of which held 1,200,000 grains of rice.

Probably the most interesting objects formed of jade are found upon the magnetic chariots invented, according to Chinese historians, by the Emperor Hoang-te, 2637 years before our era. These little chariots were attached to a strong magnetic needle, and a little figure of jade with outstretched arm was placed in the chariot and pointed always to the south.

To properly appreciate the great merit of objects carved in jade, we must remember the hard and tenacious quality of its grain, which yields only to the attacks of the diamond and of emery, and must recall both the labor and the time devoted to their fashioning by the Chinese lapi-

daries, a single object often representing the labor of a lifetime.

The high prices that jades command, even in China, have made a great demand for a kind of chalcedony, which the sharp merchants of Canton sell to strangers for genuine jade. There are two kinds: the first of a tender green color, brought from Yun-nan; its cost increases as its color is stronger and of a brighter apple green. The second, of a dark cloudy green, comes from Kansouh.

In a Persian manuscript in the National Library at Paris we read that the Yeschm (Persian for jade) of commerce is of two kinds, the one of mineral origin, the other a product of art. It seems impossible to distinguish the one from the other, wherefore, naïvely remarks the writer, no difference is made in their price; indeed the public knows no distinction, which accounts for the exorbitant demands of merchants. Teng-youen-yang, a commentator of the 'Ritual of the Tcheous,' who lived under the Mings, says: 'The men of the people dampen the rice and mix hemp with the silk. The pedlar makes jade from other stones, and the local merchants turn new objects into old and sell old for new.'

The Arab 'Mohammed ibn Mansour,' assures us, in his work on precious stones, that in China they make an imitation of jade which has a smoky odor, and that if a vase of jade be broken they mend it with artificial pieces which cannot be distinguished from the natural. And Teïfaschi says artificial yeschm is made in China from a combination of several materials, and then further relates his own happy efforts at its production in the 'Land of the Pharaohs.'

As for the pretended jade of Europe, America and Oceanica, known as jadeite and nephritic jade, they are

simply inferior varieties of feldspar, under which name they have been classed by Haüy. They are generally of a dark cloudy green. The so-called white jades of Europe are found in Turkey, Poland and Switzerland.

These details will suffice, we think, to forearm amateurs against the frauds which both in the East and the West are becoming so prevalent in all industries."

METAL VASES AND BRONZES.

The manufacture of metal vases of gold, copper, iron and bronze dates back in China to a very remote period, which is fixed both by the style of the characters used and by the names inscribed. Thus we find still existing in China vases of the periods of the Shang, Chow and Han dynasties dating back to 1784 B. C. These vases were produced for the Emperor's use in religious or public ceremonies, or to be given as rewards for meritorious actions. Such vases, the marks of imperial favor, became heirlooms, and were transmitted from generation to generation as religious relics to be worshipped.

The artistic merit of these vessels lies principally in the outline and chaste method of relief decoration, consisting mostly of scrolls and intricate curves, each of which had its significance to the designer, relating specially to the action the vessel was to commemorate, or admonishing the recipient to guard against evils in his path. Of these evils gluttony appears to have been considered the most dangerous, for its symbol is encountered on three-fourths of the vessels of these periods. A not unusual decoration upon mirrors and such vessels is the cycle of Fuh-he, the founder of the Chinese Empire (about 3300 B. C.) He is still worshipped as the author of all inventions. He claimed to have discovered both the active and passive principles in nature. The active he termed Yang or male, and the

passive, Yin or female. His cycle is symbolical of all the possible changes in nature. It consists of the eight possible combinations under his division of the sacred number three. Plate C, fig. 19.

Fuh-he also discovered the dragon Lung, the God of Rain, arising from a river in the province of Ho-nan, and who is represented ascending and descending in the clouds. He has four legs, with five claws on each foot, and his figure has been adopted as the imperial insignia. Occasionally the dragon is suggested upon vessels of this period. A figure more frequently introduced is that of the bird Hwang, which only appears in seasons of abundant harvests and great prosperity.

SYMBOLICAL ORNAMENTS USED IN THE DECORATION OF CHINESE BRONZES.

On handles of sacred vessels the eyes or head of a lynx are admonitory of reverence, and is a decoration very often used. Vases with three feet have allusion to the three stars which are supposed to preside over Prince, Ministers, and People. Vases with four feet are in honor of the four higher civil officers. Those decorated with clouds and thunder are supposed to have been originally given by the Prince for agricultural merit. Vases inscribed with words such as hog, ox, sheep, etc., were given as a reward to persons successful in raising these animals. Vases presented to the literati were of iron; those to ministers of state, of fine copper; those to nobles or used by the Emperor were of gold.

In the religion of the Chinese the worship of their ancestors forms a very important feature, and vases which commemorated their virtues were handed down from genera-

tion to generation and guarded with religious devotion. It was the custom in these remote times for the Emperor in worshipping to use nine vessels; a nobleman seven, a minister five, and a literati three. In more recent times it has been customary for the Emperor to send an inferior vase with the word Keen (rectitude) inscribed upon it, as an admonition to an offending minister whose offence was not so great as to merit death. Vases are seen with the word Tsze (meaning "son") inscribed upon them, and authorities differ as to its meaning; some affirm it was a surname in the Shang dynasty, others say it meant the vase was to descend from son to son. These vases from the style of the character Tsze seem to be anterior to 1105 B. C. Some vases, from the inscription upon them, are supposed to have been intended for use at different seasons of the year, such as Kang (mature), which refers to autumn; Kioli, an astronomical character, which refers to the period when fruits are ripe.

The Egyptian scroll is a very favorite form of decoration; there are also a curious series of twisting intricate curves varying in design, but bearing general resemblance to a human face, which are called by the Chinese Haou-teën, or voracious eating, and are intended as an admonition against gluttony. Vases given for military prowess are distinguished by a figure holding a weapon in his hand, by a tiger, or by the double Chinese word Kungs, meaning "bows."

In ancient times the days were divided into male and female, or hard and soft days. Thus marriage or domestic ceremonies were performed on soft days, whereas military ceremonies and the like on hard days; thus the word Jow (soft), or Kang (hard), is found upon vases which were used accordingly. It is recorded that anciently fish

were offered to the moon in winter, and there exist vases of the Shang dynasty inscribed with a moon, fish and altar. Vases with the word Ting (tripod) upon them were very highly esteemed. The Chinese always call the handles *ears*. Animals' heads on the handles of drinking cups were admonitory of temperate drinking. A rhinoceros' head on a vase was an admonitory sign. The She-King, in denouncing the crimes of one of his ministers, says: "Give him the Rhinoceros' cup."

SYMBOLICAL ORNAMENTS.

We are so much accustomed here, as well as in Europe, to ornament being applied to works of art simply to please the eye, that we are apt to think that the same rule prevails everywhere. The truth is that many of the devices we employ belong to the faiths long passed away, such as the religions of Greece and Rome, or are derived from sources so widely divergent that in combination they become incongruous and unmeaning.

Such is not, however, the case in the far East, especially in China, where each color and each flower has its appropriate meaning and purpose. In Japan, some of the designs on pottery and porcelain are derived from the history and mythology of those islands, or adapted from the quaint heraldry of the noble families; but the art of making porcelain having been learned from China, and Chinese porcelain being much valued, we often find copies of Chinese devices on Japanese porcelain, though more rarely on Japanese pottery.

To explain fully the numerous devices which appear on Oriental porcelain would require considerable space and more information than we at present possess; information, moreover, of a kind not easily obtained. It must be remembered that there are three different religions in China, and that the follower of one of them is rarely able to explain the devices belonging to another. We propose, therefore, only to notice such as occur more commonly.

SYMBOLS.

PLATES A, B.

The first to be noticed are the peculiar figures which have been termed symbols, and which are more usually found on Chinese than on Japanese porcelain. These symbols are generally eight in number, although the individual forms are apt to vary. The number eight is somewhat of a favorite among the Chinese, perhaps on account of the Pa-kwa or eight mystical trigrams, to be described hereafter; but it is also a number which admits of being symmetrically arranged.

1. The Pa-gan-sien, or emblems of the eight immortals, which do not very frequently occur on porcelain as symbols, and will be described under the head of the eight immortals. These are especially Taoist.

2. The Pa-chi-siang, or "eight lucky emblems" of the Buddhists, represented in Plate B. These are carved in wood or made in clay, and offered on the altar of every Chinese Buddhist temple, as well as repeated *ad infinitum* in architectural decoration: they are derived from India, and are of course used principally by the Buddhists.

3. The ordinary Pa-pao, or "eight precious things," some of which are represented in Plate A, are very variable, and do not seem to be connected with any special religion.

THE ORDINARY SYMBOLS.

Plate A, fig. 1. An oblate spherical object, represented sometimes white and sometimes yellow, with a ribbon entwined around it. This represents a pearl; and is frequently seen floating in the air with dragons, who appear to be emitting it from their mouths; occasionally rays of effulgence issue from it. In a Japanese legend connected

with the conquest of Corea by Zingu, widow of the Mikado (A. D. 200), a curious incident is mentioned. She convokes the kami or genii, and one of them, Isora, is charged to seek the dragon's castle at the bottom of the ocean, and obtain the magic pearls of the flux and reflux, by means of which she gains the victory.

Plate A, fig. 2. A circular object, apparently hollow, and enclosing a square. This is described by M. Jacquemart as a Kouei, or a stone of honor for magistrates. It does not, however, appear to agree with the description of this stone or sceptre as given in Williams' Dictionary under Kwei, where it is described as a "tablet with rounded top and square base, and made nine, seven, or five inches long according to the bearer's rank." This object is probably a coin, a symbol of riches.

Plate A, fig. 3. A lozenge-shaped object, apparently an open frame, as the fillets show through it. This is also termed a Kouei by M. Jacquemart. Two lozenges with the ends overlapping are used to represent the dual symbol (Fang shang).

Plate A, fig. 4. A lozenge-shaped object, with a compartment in the upper side, perhaps a variant of that last described. A somewhat similar object is designated by M. Jacquemart as a sounding stone, for which, however, the next specimen seems better suited.

Plate A, fig. 5. An object somewhat like a mason's square. This is no doubt what is described by Williams as a sonorous stone or bronze plate, used instead of a bell in China, and termed Khing. He states that figures of this instrument are seen carved on the ends of rafters, etc., as an emblem of the different character with the same sound, which signifies "goodness," "happiness," or "luck."

Plate A, fig. 6. Two oblong objects placed close together, exactly alike, and probably representing books.

Plate A, fig. 7. A pair of curved objects intended to represent rhinoceros horns.

Plate A, fig. 8. A leaf of variable form, probably a leaf of the artemisia, an emblem of good augury.

Instead of these symbols are sometimes to be found the shell, a flower, and two fishes, which will be described in the series given in the next plate, as well as a branch of coral, a silver ingot, a cake of ink, etc. These symbols are also sometimes seen carried in a procession of fantastic figures, possibly tribute-bearers from the tribes of the Man or southern barbarians.

BUDDHIST SYMBOLS.

Plate B, fig. 9. A bell (Chung). This is generally replaced by the Lun or Chakra, the wheel of the law.

Plate B, fig. 10. A univalve shell (Lo), the chank shell of the Buddhists. A shell was lent by the Government to the ambassadors to Loochoo, to ensure them a prosperous voyage.

Plate B, fig. 11. A state umbrella (San), possibly intended for the Wan-min-san, "The umbrella of ten thousand people," which is presented to a mandarin on his leaving his district as a token of the purity of his administration.

Plate B, fig. 12. A canopy (Kae).

Plate B, fig. 13. The lotus flower (Hwa). This symbol is never represented with fillets; it occurs not uncommonly as a mark. Although properly the sacred lotus of the Buddhists, it is often represented more like a peony, or some other flower.

Plate B, fig. 14. A vase with cover (Kwan).

Plate B, fig. 15. Two fishes (Yu) united by fillets, allude to domestic felicity. A freshwater fish, like a perch,

called Fu, was supposed to go about in pairs, faithful to each other. It has exactly the same sound as Fu, "riches."

Plate B, fig. 16. An angular knot, the intestines, an emblem of longevity.

OTHER SYMBOLICAL DEVICES.

Plate C, fig. 17. A seal character (Show), longevity, arranged in an ornamental form. This character is represented in no less than one hundred different ways, and often occurs on porcelain. That engraved is from a saucer, where it is surrounded by five bats.

Plate C, fig. 18. A bat. This animal is constantly represented on Chinese works of art, and the cause of its presence is a singular one. Though written with a different character, the name of the bat, Fuh, has exactly the same sound as Fuh, happiness, and it is, therefore, very commonly used as a synonym for the latter. The figure is taken from a saucer on which there are five bats. These five bats symbolize the five blessings or happinesses, viz. 1. Longevity, 2. Riches, 3. Peacefulness, 4. Love of virtue, 5. A happy death.

Plate C, fig. 19. The famous set of eight trigrams, known as the Pa-kwa. They consist of combinations of broken and entire lines, each differently placed. The entire lines represent the male, strong or celestial element in nature, and the broken, the female, weak or terrestrial. Each group has its own name, and even the dishes at a feast are arranged in accordance with these diagrams. They are said to have been first published by Fuh-he, the legendary founder of the Chinese polity, who is stated to have lived B. C. 2852 to 2738, and to whom they were revealed by a dragon-horse. By them the Chinese phil-

osophers attempted to explain all the secrets of nature and of being. The diagram here given is the oldest arrangement, in which they are supposed to be in connection with the points of the compass, the north and south being, however, reversed, according to the Chinese system.

The circular figure in the centre is the mystical device, the Yang and Yin, the male and female elements of nature. This device is frequently employed as an ornament in China.

THE EIGHT IMMORTALS.

The Pa Sien, or eight immortals, are legendary beings of the Taoist sect, said to have lived at various times and attained immortality. They are not unfrequently depicted on porcelain, and are also to be found as separate figures, of which there are two sets, one standing, the other seated; sometimes they ornament the edges of plates, standing on various animals among the waves of the sea, and their symbols occasionally occur as devices.

The following are their names in the sequence in which they are represented in the engravings; their order, however, differs in various lists, see Williams' Dictionary, under "Sien," and Mayer's Chinese Reader's Manual, p. 338, from which latter most of the information here given is derived.

1. Han Chung-le [Pl. D], said to have lived under the Chow dynasty, which lasted from 1122-249 B. C., and to have obtained possession of the elixir of immortality. He is generally represented as a fat man with a bare belly, and holds in his hand a fan, with which he is said to revive the souls of the dead. His emblem is a fan (Shan). He is also known as Chung-le-Kwan.

2. Leu Tung-Pin [Pl. D], born A. D. 755. While a magistrate of the district of Teh-hwa, he is said to have encountered Han Chung-le among the recesses of the Lu-Shan, from whom he learned the mysteries of alchemy and of the elixir of immortality. He was exposed to a series of temptations, ten in number, and having overcome them, was invested with a sword of supernatural power, with which he traversed the empire, slaying dragons and ridding the earth of divers kinds of evil for upwards of four hundred years. His emblem is a sword (Keen).

3. Le Tee-kwae [Pl. E]. It is uncertain when he lived; he was instructed in Taoist lore by Lao Tsze himself, who used to summon him to interviews in the celestial spheres. To do this his spirit had to leave his body, which he entrusted to the care of a disciple. On one occasion the disciple was summoned away, and when the disembodied spirit returned the body was gone. Lee Tee-kwae therefore took refuge in the body of a lame beggar, in whose shape he continued his existence, supporting himself on a crutch or staff. His emblem is the pilgrim's gourd (Hu-lu), and he holds a staff in his hand.

4. Tsaou Kwo-kiu [Pl. E], said to be the son of Tsaou Pin, a military commander, who died A. D. 999, and brother of the Empress Tsaou How. He is therefore represented as wearing a court headdress. His emblem is a pair of castanets (Pan), which he holds in one hand.

5. Lan Tsae-ho [Pl. F], of uncertain sex, but generally considered a female. In the engraving a male figure is represented carrying a flower-basket (Hwa-lan), which is the usual emblem.

6. Chang Ko-laou [Pl. F], said to have flourished towards the close of the 7th and middle of the 8th centuries. He was a great necromancer, and used to be accom-

panied by a white mule, which carried him immense distances, and when not required was folded up and put away. The Emperor Ming Hwang summoned him to his court, but he refused to go. He is represented with a bamboo tube (Yu ku), a kind of musical instrument used by Taoists, and two rods to beat it; the latter are sometimes placed in the tube forming his emblem.

7. Han Seang-tsze [Pl. G], said to be a great-nephew of the statesman and philosopher Han Yu, who lived A. D. 768-824. He was a pupil of Leu Tung-Pin, by whom he was carried to the fabulous peach tree of the genii, but fell from its branches. He is represented as a flute-player, and his emblem is a flute (Tieh).

8. Ho Seen-koo [Pl. G], stated to have been the daughter of Ho Tai of Tseng-cheng, near Canton. She used to indulge in solitary wanderings among the hills, and rejecting the ordinary food of mortals, ate the powder of mother-of-pearl, which was supposed to produce immortality. She was summoned to the court of the Empress Wu (A. D. 690-705), but on her way disappeared. She carries in her hand a lotus flower (Leen-hwa), which forms her emblem.

EMBLEMS OF LONGEVITY.

The greatest desire of a Chinaman is long life, which prolongs his enjoyment of this world's goods, and ensures his receiving the respect paid to old age in a country governed by the maxims of Confucius. Longevity is therefore the first and greatest of the Woo Fuh or "Five Blessings."

The Taoists, or followers of Lao Tsze, carried this still further, spending their time like the mediæval alchemists, in the search after the elixir of immortality.

As might therefore be expected, the emblems of longevity occur very frequently on porcelain, and take a great variety of forms, all symbolizing good wishes to the possessor; it may be therefore useful briefly to describe these emblems.

One of the commonest of the seal characters with which porcelain is decorated is the word *Show* (Japanese *Ju* or *Z'yu*), "longevity" (see Pl. C, fig. 17), of which the varieties are endless. On a vase published by M. Jacquemart (1873, p. 44) a number of different forms occur. A set of a hundred varieties is on a roll in the British Museum, another set is given in Hooper and Phillips' *Manual of Marks*. The word is also used as a mark on porcelain.

We also find statuettes and representations of the god longevity, with an elongated bald head, holding a sceptre of longevity, resting on a deer or riding on a stork or tortoise.

A knot pattern (Chinese, *Chang*; Japanese, *Cho*) is also used as an emblem of long life, more especially in China. It is a Buddhist symbol, the intestines, and is represented in Pl. B, fig. 16. It is to be observed that the line forming it has neither beginning nor end.

Among the animals connected with longevity should be mentioned the fabulous *K'i-lin*, though it was rather employed as a symbol of good government, which its appearance was supposed to herald. It was said to attain the age of one thousand years. It must however be remembered that most of the animals commonly termed *Kylins* are other monsters, especially the fabulous lion of *Corea*. The true *K'i-lin* is represented with the body and hoofs of deer, the tail of a bull, and a single horn on his forehead.

The deer (Chinese, Luh; Japanese, Roku) is also an emblem of longevity. A white stag frequently accompanies the god of longevity. It sometimes carries in its mouth another emblem, the fungus. A deer however is also used as a symbol of official emolument or prosperity, having the same sound as the word for the latter (Luh). It is probably for this reason that we find a fawn accompanying the Japanese god of talent, Toshi-toku.

The hare (Chinese, Tu; Japanese, Usagi) is sacred to the moon, where the Taoists believe it to live pounding the drugs that form the elixir of life. It is stated to live a thousand years, and to become white when it has reached the end of the first five hundred. The hare, often mis-called a rabbit, occurs on porcelain, both as a decoration and as a mark.

The fox (Chinese, Hu; Japanese, Kitsune) is considered, especially in Japan, as a very mysterious animal. There are several wonderful legends concerning it in Mitford's "Tales of Old Japan." It is said to attain the same age as the hare, when it is admitted to the heavens and becomes the celestial fox.

The tortoise (Chinese, Kwei; Japanese, Ki or Kame) was also a supernatural animal, and its shell was used in divination. The tortoise with a hairy tail is depicted in Japan as an attendant on the god of old age, and is used as an emblem of longevity. A Chinese phrase Kwei-ho-tung-chun signifies "May your days be as long as the tortoise and stork."

The stork (Chinese, Ho; Japanese, Tsuru) is one of the commonest emblems of longevity. It is said to reach a fabulous age, and when six hundred years old to drink, but no longer eat; after two thousand years to turn black.

Among plants are three trees, which though not all

strictly speaking emblems of longevity, are closely connected with it; these are the pine tree, bamboo and plum. They are termed by the Japanese in combination Sho-chiku-bai. The Chinese say "the pine, bamboo and plum" are like three friends, because they keep green in "cold weather." The pine tree (Chinese, Sung; Japanese, Matsu) is a very common emblem, and to be found on many specimens in the collection. Its sap was said to turn into amber when the tree reaches the age of a thousand years. The bamboo (Chinese, Chuh; Japanese, Take) is another emblem, owing probably to its durability. Its elegant form causes it frequently to be depicted in works of art, both in China and Japan. The plum tree or prunus (Chinese, Mei; Japanese, Mume), though not properly an emblem of longevity, is indirectly connected with it, as the philosopher Lao Tsze, the founder of the Taoist sect, is said to have been born under a plum tree. It forms the decoration of the porcelain erroneously termed "May flower" or "hawthorn pattern."

The peach (Chinese, Tao; Japanese, Momo) is a symbol of marriage, but also of longevity. Great virtues were attributed to the peach, especially that which grew near the palace of Si Wang Mu, Queen of the Genii, on which the fruit ripened but once in three thousand years.

The gourd (Chinese, Hu-lu; Japanese, Hiotan or Fukube) is also an emblem of longevity, especially in Japan, owing perhaps to its durability when dried.

Of all plants, however, the most common emblem of longevity is the fungus (Chinese, Chi or Lingchi; Japanese, Reishi) which has been already mentioned.

The fungus in question is probably the *Polyporus lucidus*, which when dried is very durable. It is preserved in temples, and is often represented in connection with

Lao Tsze and the immortals. It is a very common ornament on porcelain.

Though not strictly an emblem of longevity, it may be well to mention the Joo-e or sceptre of longevity (literally "as you wish"), which is often given at marriages, and to friends for good luck. It is made of a great variety of materials, such as jade, enamelled metal, lacquer, &c. It is often represented in the hand of the god of longevity.

JAPANESE SECTION.

POTTERY AND PORCELAIN.

Japanese legends attribute the invention of pottery to Oosei-tsumi, who lived long before 660 B. C., the beginning of the historical period of Japan. Between 660 and 581 B. C., Wakanet su Hiko-no-mikoto, in the province of Yamato, made some vessels of pottery for use in the temples. By order of the Emperor Suinin (29 B. C.), human figures made of burnt clay were buried with deceased members of the imperial family in place of their servants, as had before been the custom. About A. D. 590, a Corean made tiles at Tokio. About 600 the pagoda of the temple of Korinji in Yamato was built of bricks. About 660 the roof of the Imperial temple was tiled. In 724 Giyoki, a priest, introduced the potter's wheel in the province of Yamato.

In 1225 Kato Shirozayemon went to China, returned and settled at Seto, in Owari, where he made stoneware. Owari or Seto porcelain is made at Seto, six miles from Nagoya, in the province of Owari.

About 1500 Ameya, a Corean, came to Kiyoto and made a black earthenware covered with a glaze containing lead, and called it Raku (enjoyment). His descendants still make small bowls and other objects of the same ware. Both Kiyoto and Mino ware are made at the places after which they are named.

In 1585 Gorodayu Shonsui went to China from Ise, studied there, returned and made the first real por-

celain of Japan. He settled in the province of Hizen, and from the first produced the different kinds of porcelain which are to-day made there, viz. the Sometsuki or blue ware, painted with oxide of cobalt under the glaze; the Kanyu or Hibiki, crackled; the Seidji or celadon, and the Grosai, meaning "five colors," enamelled on the glaze. This ware is now called Nishikide. The old Hizen or Imari porcelain, made principally at Arita, is decorated with blue under the glaze, black outlines and red, green and gold. For a short time all the articles were marked Shonsui.

At more recent dates, porcelain has been made at Kutani. Kutani is the name of the mountain in the province of Kaga where the porcelain material is found. The factory is in the village of Yamashiro.

About 1595 the Prince of Satsuma having invaded Corea, brought home a number of potters with their families, and near Nagoshima in the province of Satsuma established factories. These families were kept isolated until within the past fifteen years. Lately Satsuma ware has been imitated at Kiyoto, Awajisima, Yokohama and Tokio.

Old Satsuma ware is generally found in small pieces, such as bowls, plates, small vases and teapots; but for the exhibition of 1876, modern vases of large size were made. Of the old Satsuma ware the finest and rarest pieces were made in the "Garden of the Prince," for his own use, or as presents to his compeers, whose families esteem them so highly that foreigners can rarely obtain examples. The earliest Satsuma pottery was of a delicate soft clay; in color of a creamy yellow shadowed into pale chocolate; it was covered with a minutely crackled glaze, similar to that now used. When decorations were introduced the

human figure was very rarely used; flowers, vines, peacocks, hohos, hatchings and scrolls forming the ornamentation found upon this princely ware.

The decoration is distinguished by great delicacy of outline; rich red and green colors and tracings in thick gold lines of a dull color. The finest Satsuma was made between the years 1775 and 1820. No porcelain has been produced at this factory except as an experiment.

Awata or Kiyoto ware was invented a little later than the slightly buff-colored Satsuma; it has a yellowish tint, and on account of its color is called Tamago-yaki or "egg pottery." The decorations originally were very light sketches in a few neutral tints, but latterly they have imitated both Satsuma and Hizen wares, and efforts have been made to adopt the European mode of painting flowers. An article very similar to the Satsuma and Awata wares is now manufactured on a small scale on the island of Awadji, and a peculiar kind of stoneware called Banko-yaki is made in the province of Ise.

The manufactories we have mentioned are those which produce articles of artistic merit, most sought after by museums and amateurs. Besides these are many small factories where all kinds of earthenware and porcelain are made into objects for household use. We find pieces glazed like the majolicas of Italy with a composition containing a large percentage of lead, some few of which are decorated with painting under the glaze; also objects ornamented with *pâte sur pâte*, and occasionally curious pieces made by amateurs, at tea parties given for the purpose, where as an amusement of the evening, each guest tries his skill to produce a work of art in earthenware. We also find the plastic arts represented by small figures, glazed and unglazed, generally of mythological person-

ages or warriors. The finest specimens of these come from Satsuma and Kiyoto. Long experience in Hizen and Owari has enabled their artists to execute very large pieces in porcelain, such as dishes three and four feet in diameter, and vases six and seven feet high. In the province of Hizen only have they adopted a potter's wheel.

At Arita, in Hizen, they make the very delicate egg-shell pottery almost as thin as paper. The glazes are always composed of a feldspathic material, natural or manufactured, to which is added a certain quantity of wood-ashes freed from alkali by careful lixiviation. The body of celadon ware is the same as that of the common, but the glaze is made from a different mineral. Crackle ware is produced from a peculiar porcelain stone, and the nature of the meshes of cracks depends upon the quality of this stone, and the degree of baking it is subjected to both before and after glazing. This ware is finely rubbed with india ink or other colored liquid to make the cracks more distinct.

The porcelain which is decorated with blue paintings under the glaze called Sometsuki is much used in Japan. The blue is derived from a native cobaltiferous ore, or from a purer material imported from China.

That which is also decorated with colored enamels goes through a third and entirely different baking at a much lower temperature, and from this fact it arises that many pieces of porcelain and faience originally made at Imari, Owari and Satsuma are decorated at Kiyoto and other places.

The principal coloring oxides are copper, manganese, antimony, red oxide of iron, impure oxide of cobalt (for black), a sort of smalt from China, and gold, which for

carmine tints is mixed with powdered glass, and for gilding with white lead or borax. These enamels are not melted beforehand, but mixed by the artist and applied directly, so that their color does not appear until after the pieces have been baked.

For centuries Kiyoto was the Imperial City of Japan, the capital of the Empire, the seat of learning, and the nursery of art. There the court resided and the nobles congregated, and there tributes were sent from every province and principality of Japan. Among these yearly tributes were always to be found objects of faience and porcelain from various factories. These objects accumulated under the eyes of the potters of Kiyoto, incited them to artistic efforts, and led them to become what they now are, the most successful artists of Japan. To-day the decoration used by every factory of Japan is imitated only too successfully in Kiyoto. When the ingredients to form the pottery itself are not to be found in the neighborhood, orders for undecorated pieces are sent to the factories, these pieces are afterwards decorated at Kiyoto and sold for genuine. Such frauds, if confined to the imitation of modern work, would not be of much consequence, but unfortunately the Japanese perseverance has discovered a method for making their youthful pottery turn gray in a short time. Even the Satsuma ware made in the "Garden of the Prince" has not escaped. At Yokohama the great foreign demand for objects of art of the best periods has led dealers to employ artists to reproduce such objects, and to-day this city has even outstripped Kiyoto in this fraudulent industry.

LACQUER.

Lacquer (Japanese, Urushi) is the vehicle most exclusively identified with Japanese art and art industries. The Chinese have attempted its use, and in Europe connoisseurs are familiar with the *verniss* of the Martins, who worked in Paris in the last century. But lacquer in all its beautiful uses and decorations is a truly Japanese belonging. The date of its first application is lost in the mistiness of tradition. Like the potter's art, the industry of the lacquer workers passed from crude beginnings of forty centuries ago to the marvels of artistic workmanship produced in the seventeenth century.

An important historical work, published in Japan one hundred and eighty years before our Christian era, speaks of lacquer objects of furniture employed at the Court. In the Temple of Todayeji, at Nara, in the province of Yamato, the priests preserve with greatest care lacquer boxes made in our third century and used to hold their books of prayer. In A. D. 380 the Sadaijin Shibeï published a book called Engishiki, in which he mentions both red and gold lacquer. Eighty years later, Minamoto no Juin speaks also of lacquers, known as Nashiji, or gold sprinkled lacquer.

In 480 a woman of great literary attainments mentions in one of her works, lacquer incrustéd with mother of pearl. From this year to 664 many allusions to this in-

dustry are found in Japanese writings, but from 664 to 910 Japan was the prey of continual wars and political intrigues, so that art found no resting-place for progress, and many of the fine objects existing were destroyed by fire or pillage. From 910 to 1650 peace held sway, the industries were revived, families became rich, luxury invaded every household, and the lacquer workers became renowned and their artistic works greatly prized. The magnificent objects produced at this period are eagerly sought after by native amateurs and prized under the name of "Jidai Mono."

About this time Nagasaki was opened to the Hollanders, who created a demand which produced an unfortunate result. Quantity rather than quality was called for, and the result was disastrous. From 1700 the art work in lacquer declined, and in 1859, when Yokohama was opened to foreigners, it created a further demand for the production of objects pleasing to the eye but inferior and defective in workmanship. Time became measured by money, and the price of objects made as of old became too great.

The objects exposed at the Paris Exposition of 1867 were of the finest period and were a revelation to Europe, as they showed by contrast how the industry had fallen. Fortunately the Home Government saw this also and exerted every effort to revive this dying art. These efforts have been rewarded by great progress, and to-day works of great merit are produced. The most beautiful objects are now made in the three cities of Tokio, Kiyoto and Osaka. In the provinces of Suruga, Nakasa, O Kii and Iwashiro inferior objects are produced.

Lacquer is the sap of the *Rhus vernicifera*, the cultivation of which in Japan is a most important branch of agriculture. Wax is made from the fruit of the lacquer

tree; this fruit is round and contains a very hard stone. The tree when five years old is regularly tapped from May until the first of November by incisions through the bark into the wood, each extending around one-fourth of the circumference of the tree. The first incisions are made about a half a yard apart on opposite sides of the tree, and every three or four days fresh incisions are made. This is repeated until the tree is destroyed and has to be cut down. Its branches are also tapped in a spiral line.

VARIETIES OF LACQUER.

1. Lacquer drawn from the branches (Seshime-urushi) becomes very hard and is used for priming.

2. The crude lacquer (Ki-no urushi) is a viscous liquid of dirty grayish color and full of impurities, which are allowed to settle, when the lacquer is drawn off and strained through cotton cloth. This straining process is very important, and for fine work the lacquers are again carefully strained through a strong paper called Gashinogami, just before using them. The fine lacquer is stirred in the open air to allow the superabundance of water to evaporate, when it assumes a brilliant dark brown color, which in thin layers is transparent, but in thick ones opaque.

3. Shunkei urushi is a lacquer which needs no grinding or polishing, and is made by mixing a little oil of *Perilla ocemoides* (Ye-no-abura) with pure lacquer. This is used for furniture, is of a yellowish color, and so transparent that the grain of the wood remains visible. The most celebrated is made in Akita.

4. Roiro urushi, black lacquer, is produced by simply stirring the crude lacquer in the open air for about two

days, and adding towards the end of this time a little water in which iron filings have been standing. These methods are varied to some little extent by the artists, each of whom prepares his own lacquer. In priming, a little burnt clay, dust, or fine stone-powder is mixed with the raw, branch lacquer, to increase the extreme hardness of this ground coating. By mixing a little drying oil with lacquer, its transparency is increased, and when dry has a considerable polish.

5. Colored lacquers are produced by mixing with the crude lacquer, cinnabar, orpiment, red oxide of iron, Prussian blue, etc., ground very fine, and the mixture strained very carefully. In producing objects of colored lacquer, the primary coating is smoothed and polished on a grindstone, two or three coats of an inferior black or colored lacquer are applied, and when dry this surface is ground with charcoal and water. The final coatings of the purest lacquers are carefully ground and polished with powdered deer horn. To finish an object of black lacquer, it is repeatedly rubbed with a ball dipped in raw lacquer, and each time carefully polished with deer-horn powder.

6. Nashiji, or gold-sprinkled lacquer, is produced by sifting particles of gold leaf on a fresh coat of raw lacquer. When hard this is smoothed over and covered with a mixture of Nashiji-urushi, gamboge, and raw lacquer, which is afterwards ground with charcoal to the required transparency, and carefully polished. For the commoner ware tinfoil is used, and the yellow of the Nashiji-urushi gives it a gold-like appearance.

7. The relief is given by many successive coats, mixed generally with red oxide of iron or colcothar.

8. The metallic powders, gold, silver, bronze, etc., are applied to the final coating before it has hardened. When

hard, the surplus powder is removed, and the lacquer polished.

9. Carved lacquer was introduced into Japan by a Chinaman about the year 1600, and is principally confined to red lacquer in imitation of the Soo Chow. It is called Tsi-shu. Occasionally also black or brown lacquer is carved.

10. Guribori is produced by thick successive layers of various colored lacquer, the last being generally brown, with scroll lines engraved deeply, so that the inclined faces will show the different parallel layers of color.

11. Lacquer is also inlaid with gold, silver, bronze, mother of pearl, ivory, porcelain, stones, and other substances.

12. Tsugaru lacquer presents an appearance marbled in red, brown and green veins. A first coat of black is applied mixed with white of egg or bean powder, then tamped with a ball of cotton to produce irregularities on the surface. These are partially ground down and a second coating of different color applied. The same operation is performed and repeated until all the colors are applied, when the surface is ground smooth, and presents most beautiful veins.

13. Wakasa ware, having a lustrous appearance of green and red, is produced by placing tin foil under the final coatings. The same means produce the brown colors with a metallic lustre.

14. Gold of sixty different shades of color is used in the production of Makiye.

Japanese records prove that lacquer has been produced for more than two thousand years; its durability seems equal to the hardest substances, even to works of bronze; neither water nor heat seems to affect the older pieces. It

has been used in large constructions as well as in small works of art. The ceilings, walls, pillars, and whole interiors of temples have been decorated with it.

The solidity and durability of lacquer objects depend not so much on the outer coatings as on the priming. When this priming has been properly done, their durability is unlimited, as may be understood by examining pieces now four or five hundred years old. A test of the most severe nature was unwittingly made in 1874, when the steamer "Nile," returning to Japan with the goods bought for the Yeddo Museum at the Vienna Exposition of 1873, foundered off the coast of Japan in twenty-five fathoms of water. Japanese divers succeeded in recovering two hundred cases from the ship, among which were several pieces of fine and carefully made old lacquer. One of these, a very handsome music stand, which was under water over eighteen months, we most carefully examined, and with the exception of the tarnished silver mountings, the piece was as perfect in its joints and in the color and polish of its lacquer as when it left the hands of its artistic maker. Not so, however, with most of the modern pieces, which had cracked and split open, and from which, in many cases, the lacquer had warped and fallen off.

In Japan lacquer bowls are used for hot wines, liquors, soups and other hot dishes. In the cheaper modern objects made for foreign markets, the priming is done with glue or paste, and such pieces will not stand either the continuous action of water or of dry heat. At present the finest lacquer is made at Tokio (Yeddo) and Kiyoto, commoner kinds in the provinces of Aidzu and Yechizen.

Freshly lacquered objects are placed in close wooden boxes which have been sprinkled with water, so that the

hardening takes place in the dark, clear of all dust, and in a damp atmosphere. It is also said that some artists finish their fine work at sea to be perfectly free from dust. The finest quality and most esteemed was produced between A. D. 1550 and 1650, and the same causes which produced the magnificent architecture and painting in Europe during the times of feudalism conspired to produce these magnificent specimens of lacquer in Japan.

SWORDS.

In no country has the sword been made an object of such honor as in Japan. The most minute detailed etiquette presided over it. It is at once a divine symbol, a knightly weapon, and a certificate of noble birth. "The girded sword is the soul of the Samurai." The gods wore and wielded two-edged swords. From the tail of the Dragon was born the sword which the Sun Goddess gave to her grandson, with the injunction: "Combat the enemies of thy kingdom with this sword, and slay them on the edge of it."

Another version says: "When Sosanoo was in banishment an eight-headed dragon had eaten up all the virgins in the land. He enticed the dragon to drink intoxicating liquor, slew him, and found in his tail a magnificent sword, called 'Cloud-cluster,' which became one of the three emblems of the Japanese sovereigns. This sword, in the hands of Yamato Dake, turned the flames lit by the Ainos to destroy the Japanese army, and consumed them or set them to flight. Yamato Dake did this by cutting down the grass, and for this reason he changed the name of the sword to 'Grass-mower.'"

The Katana (sword) has always been considered the badge of gentle condition in Japan, and has ever been associated in the minds of foreigners with the Yakunin (official), or the Samurai (daimio's armed retainer). The

long sword was used for fighting, the short sword for suicide. Many warriors greatly preferred death to surrender, and always wished to have the means about them. The long sword was never used for suicide, being thought unworthy, as it had been used against an enemy.

The rules of observances connected with the wearing of the long and short or the single sword were most minute, but have fallen into disuse. Gradually the wearing of these weapons had almost ceased, and with the opening of Japan to the intercourse of western nations, the practice, except by officers of the army and the navy, was prohibited by the government. But in former days the most trivial breach of these minute observances was often the cause of murderous brawls and dreadful reprisals. To touch another's weapon or to come into collision with the sheath was a dire offence, and to enter a friend's house without leaving the sword outside a breach of friendship. Those whose position justified the accompaniment of an attendant invariably left the sword in his charge at the entrance, or, if alone, it was usually laid down at the entrance. If removed inside this was invariably done by the host's servants, and then not touched with the bare hand, but with a silk napkin, kept for the purpose; the sword was placed upon a sword-rack, in the place of honor, near the guest, and treated with all the politeness due to an honored visitor who would resent a discourtesy.

The long sword (if two were worn) was withdrawn sheathed from the girdle with the right hand, and placed on the right side, an indication of friendship, as it could not be drawn and used thus; never was it drawn with the left hand, or placed on the left side, except when in immediate danger of attack. To exhibit a naked weapon

was a gross insult, unless when a gentleman wished to show his friends his collection. To express a wish to see a sword was not usual, unless a blade of great value was in question, when such a request would be a compliment the happy possessor would appreciate. The sword would then be handed with the back towards the guest, the edge turned towards the owner and the hilt to the left, the guest wrapping the hilt, either in a sheet of clean paper or in the little silk napkin always carried by gentlemen in their pocket-books. The weapon was drawn from the scabbard and admired inch by inch, but not to the full length, unless the owner pressed his guest to do so, when with much apology the sword was entirely drawn and held away from the other persons present. After being admired, it would, if apparently necessary, be carefully wiped with a special cloth, sheathed and returned to the owner as before.

The short sword was retained in the girdle, but at a prolonged visit both host and guest laid it aside. Women did not wear swords in their girdles by right or fashion, although when travelling it was often done. On the occasion of fires, the ladies of the Palace sometimes placed side-arms in their girdles.

The ordinary length of the Katana blade was 2 feet $\frac{8}{10}$ inches; the small sword, or Wakizashi, worn with it, 1 foot $\frac{8}{10}$ inches. In full dress the color of the scabbard was black, with a slight tinge of green or red; the binding of the hilt, blue silk; the mountings of the guard and hilt shakudo (alloy of copper and gold). The names of makers are innumerable, and each has his particular form of blade, etc., and mode of welding the hard metal of the edge to the softer and tougher body and backing.

Swords more than three centuries old are common

enough, and all of a later date are called "new blades" (Shinto). There are blades known to be nearly ten centuries old, though these are very rare now. Ama-kuni and Shin-soku are two of the oldest makers whose swords are still in existence.

The Chisa-katana is about two feet long to two and a half feet, and lighter than the ordinary blade, and is worn with the naga hakama and court-dress called daimon (large crest). The Metezashi (right-hand use) is a short sword, stuck in the girdle behind, the hilt to the right, used in fighting if the wearer be thrown and unable to draw the swords on the left side of the girdle. The Aikuchi is a short dirk without a guard, worn by doctors, artists, and those with the rank of Hoin and Hogen (about equal to officials of the fourth and fifth ranks). The Tanto and Mamori katana are stilettos about a foot or less long, worn in the girdle by officers, gentlemen, and nobles, in place of the more cumbrous Waki-zashi. The Jintachi (war sword), a long heavy two-handed sword, generally carried by a sword-bearer when not in immediate use. The Nodatchi is a sword of medium size, worn when hunting or rambling in country places for pleasure. The Tatchi is hung from the girdle by two slings; there are several styles. The Shin-no-tatchi has a shagreen hilt, and on the guard and scabbard and other mountings there should be seventy-five examples of the crest of the owner. The Yefu-no-tatchi has a lacquered and gilt scabbard; the Sayamaki is a portion of the scabbard bound with silk. The mountings are numerous and the making of them is a special and honorable trade. Goto Yujo was a celebrated maker of the XVth century whose descendants still exist. The work of this family is called Iyebori (the family's chasings).

The first group called "articles of three places," com-

prises, first, the ferrule on the head of the hilt, and the ring behind the guard ; second, the two pieces of metal interwoven with the silk binding of the hilt, used to hide the hole of the rivet, and to ensure a better and firmer grasp of the sword-hilt ; and third, the small knife and skewer-like pieces of metal inserted into the scabbard so as to be drawn out for use at pleasure. The small knife (Ko-katana) bore the owner's name engraved upon it. When the murder of a relative was avenged, at night or in a secret place, the head of the victim was cut off, and the avenger plucking out his Ko-katana, thrust it in the ear of the victim, and let it lie on the public highway, or sent it to be deposited before the gate of the victim's house ; the Ko-katana with the name engraved on it told the whole story. The two skewers were formerly used to thrust through the top-knot of the head of a decapitated enemy to carry it, but they are now used as chop sticks.

The guard (Tsubu) is often a wonderful piece of workmanship in metal. Those of Nanban (southern iron) were considered the best, though other valuable metals, worked up with gold, silver, etc., into a detailed picture of battles, hunting, or scenery, were used. Nearly every article connected with the sword was richly inlaid to correspond. Guards were also made of several thicknesses of leather or raw hide, called Neritsuba, of Shakudo, of Shibuchi, of solid silver, gold, and iron. The Seppa are washers of which there is one or more above and below the guard, made of flat pieces of metal, brass, silver or gold. The Habaki is a ferrule on the "forte" of the sword extending about an inch below the guard, made of the same metal as the Seppa. The Kojiri is the ornamental ferrule on the lower end of the scabbard, often very expensively inlaid to match the other mountings. The Kurikata is the small

cleat on the scabbard through which the Sage-wo, or silk cord, is rove; this is of various materials and generally made as part of the scabbard. The Saguri is a small hook on the scabbard to prevent the sword slipping too far through the girdle. The Tskaito is the silk cord bound crosswise on the hilt. There are several styles of binding, Maki, Dashi me nuki, Katate maki, Neomaki, etc. Some swords have only short skin hilts without silk, but generally the silk binding is over the skin (Same), those pieces having the largest nodules being most valuable.

The sheath or scabbard (Scia) is made of a wood called Ho, generally lacquered. Black and dark colors are preferred: gaudy crimson and variegated colors are affected by the old "swashbucklers." Leather covers are worn over the handsomely lacquered scabbards; shark-skin ground down, inlaid with shell-work or peculiar kinds of lacquer, is sometimes seen on scabbards. The Sage-wo is the long silk cord, of various kinds and colors of sennet, about five feet in length for large swords, half that for short swords, used to bind up the sleeves preparatory to fighting. On journeys the gentleman's sword-bearer carried the honored blade covered with the Shiki hada, a sword-case of leather or cloth emblazoned with the owner's crest.

CELEBRATED SWORDS AND MAKERS.

Old weapons are frequently presented to Kami shrines, especially those dedicated to Hachiman and Dai Jin Gu. The following are some of the numberless renowned blades and their forgers. Ama-kuni of Yamato, who lived about A. D. 700, was a celebrated maker. One of his blades is said to have been carried off by a crow during

the reign of Kuwammu-Tennō, A. D. 782, and has since been known by the name of the Kogarasu maru* (little crow). In A. D. 940 Taira Sadamori became the possessor of this sword, which was drawn by him in the wars with Masakado, who was until lately deified at Kanda, Yeddo. Shin-soku, who lived at Usa no Mia of Buzen, was ordered to forge a blade for the son of the Emperor Heizei Tennō in A. D. 806, and he cut his name on the blade, the first time this was done. There is a legend that Riu Jin† came to his assistance. Of ninety-nine swords he is said to have made, only eight had his name on them, and the Hachiman shrines are named as being in possession of most of these blades, many of which are now little else than a mass of rust.

Ohara Taru daiyu Yasutsuna of Hoki, a contemporary of Shin-soku, forged a blade which in A. D. 947 was used by Raiko (Minamoto Yorimitsu) to kill Shi ten dôji, a celebrated robber. He dreamed that this sword, then still at the Isê shrine, alone had power to break through the

* Names were given to swords as to vessels, horses, and other favorite possessions; the commonly used affix Maru meaning perfect. Formerly even the young sons of nobles were thus styled, as Take chi yo maru, a common title for the heir to the Tokugawa line; as also to castles, such as Hon maru (true perfect), or Nishi maru (west perfect).

† Riu Jin is the same as the old man living at the bottom of the sea in Riugu (Dragon Shrine). The father of Toyotama hime, Hiko, quarrelled with his brother, and descending into the depths of the sea became enamored of Toyo, and lived with her in coral caves until she was about to bring forth her child. Hiko then built her a hut on the seashore, roofing it with cormorants' wings. Here Fuki was born, and his mother Toyo then became a crocodile, and returned to her home in the deep, Hiko having displeased her. She left her sister Tama-yori-hime behind, who married Fukiawasedzu, and Jimmu Tennō was their fourth child.

spell of invincibility that surrounded this celebrated robber, who is even now known to children as a ghou. This sword was placed in the Isê Mia as an offering by the Shogun Tamura. Another sword of the same make was likewise placed at Kehi-miojin in Echigo by the Shogun Toshihito.

Ohara Sane-mori, another maker of celebrated swords, lived at the same time. One of his blades was called Nuke maru, from its having flown out of its sheath and destroyed the Ja (enormous serpent) that came to swallow up Taira Tadamori, who had laid the weapon sheathed beside his pillow when lying down to rest. Another blade called Korgarashi maru, in the possession of the Heiki family, was reputed to cause trees to wither if it was laid down touching them.

About A. D. 985, Yukihiro was another celebrated sword-maker. One of his swords was used by Watanabe, the follower of Yorimitsu (Raiko), to cut off the arm of the Oni (ghoul) when sent by Raiko to exterminate the wicked ghouls, dragons, ja, etc.

There lived A. D. 1003, in Yamashiro, Yoshi iye, to whom appeared Sumiyoshi Daimo Jin (of the temple of Osaka) and ordered the best blade that could be welded. When it was finished, the maker was on his way to the temple, as ordered, but while crossing the water he dropped the sword into its depths. A cormorant dived, and finding, flew away with it. Shortly afterwards a new sword was found at the shrine of Sumiyoshi, which proved to be the lost blade, and it is now called Wunomuru (Wu, a cormorant).

In A. D. 1204, Yoshimitsu worked at Awadaguchi, in the province of Yamashiro, commonly known as Toshiro. His make of swords having cut through a druggist's

metal mortar (called Yagen), are known as Yagen Toshiro. In 1279 Naga-mitsu made a sword, afterwards worn by Iyeyasu, called Adzuki naga-mitsu, from its cutting a bean (Adzuki) thrown into the air.

A. D. 1322, Mura-masa of Senjiu mura in Isê, commonly spoken of as Senjiu-in Mura-masa. His swords would, it is said, cut a sheet of paper floating on the stream if the sword were only held in the water to meet the paper. Such was the reputed keenness of these weapons, and so great the desire to test it possessed the owners, that when a fitting opportunity occurred, the Tokugawa government forbade their being worn.

In 1326 Masa-mune, the most celebrated of sword-makers, forged some of his best blades, now still in existence. The welding shows a peculiar golden tinge, like forked lightning through a dark cloud. He folded his metal from four sides, beat it out, and refolded it in a peculiar manner.

All swords made since 1570 are called Shintô (new swords), and the old but inferior blades are included with these. The swords of previous make are called Kotô (old swords). Subsequent makers are numerous, but as there are no special legends connected with their blades, or particular characteristics pertaining to them, the list of their names is omitted here. The edge of the Japanese sword is tempered separately from the body by being covered with clay when placed in the fire, and this process brings out the marking peculiar to these swords, called ya-ki-ba (burnt head).

BRONZES.

In bronze and other metals the Japanese need fear no comparison, within a certain range of subjects, with the best work which Europe can show. In artistic treatment of metals of small groups and natural objects, such as are depicted in their woodcuts, they have attained very rare excellence; and in nearly every department in casting, engraving, chasing, inlaying and damascening, they seem to have little, if anything, to learn from Europe. In bronze casting and moulding they may be considered masters. They are equally capable of colossal and minute work, and we believe there are processes known to them of which we are wholly ignorant. Their marvellous delicacy of touch and execution is more remarkable, because in the fashion of their tools, as in their smelting and refining processes, everything is of the most primitive kind. Their ovens, furnaces, etc., are simple and rude; yet judging by the work, they have a perfect command of their materials, from the ironstone to the steel of their sword-blades.

If the Japanese have borrowed from the Chinese in bronze casting, they seem to have nothing to learn from us. They not only give all the delicate moulding of the lotus leaf, by some process unknown, but produce relief ornamentation by cutting the surrounding metal away. Such relieved work they further enrich with the burin or

damascene with gold and silver. Repoussé work is also known and practiced by them. They are much in the habit of graving diaper and other patterns on bronzes and filling them up with silver wire. They thus cover large surfaces of salvers or vases with good effect, and very original designs or patterns. The Japanese alloys are mostly used for ornamental castings, statues, musical instruments and bells. The name given to an alloy generally corresponds to the color produced by the treatment which the objects have to undergo before they are finished; thus some of the alloys are named green copper, violet copper, black copper, etc. This color depends both upon the composition of the alloy and the chemicals used in coloring the metal. There are many different means used to produce one and the same color, and it so happens that almost every manufacturer uses particular compositions of his own; generally it is only the proportions that differ, but sometimes even the constituent elements are different, although the alloy is called by the same name.

The green copper (Sei-do) is composed of copper and lead, or copper, lead and tin; the Sentoku-do, of copper, lead and spelter, and, similar to the old Corinthian alloy, is said to have been first produced by a large conflagration which took place in China during the earlier part of the XVth century. The black alloy called U-do, of copper, lead and tin; the brass, of copper and spelter, sometimes with a slight addition of lead, as for instance in Yechiu, one of the chief places of production of ornamental castings inlaid with gold and silver; the purple alloy is composed of copper and lead; the so-called Gin-shibu-ichi is generally composed of six parts of copper or alloy and four parts of silver. Another peculiar composition is the Shakudo, copper with a small per-

centage (two to five per cent.) of gold, which produces a beautiful dark purple color, and is mostly used for articles formed by hammering or for repoussé work, generally inlaid with gold and silver and producing designs somewhat similar to the so-called "Niello" work.

The Japanese word for bronze is Karakane, which means Chinese metal. The industry of bronze casting is of very ancient origin. At first the metal was brought from China or Corea, as copper was only discovered in Japan at the beginning of the VIIIth century, when bronze casting had already reached a certain state of perfection, since Giyoki the priest, who introduced the potter's wheel, had proposed at this time to erect a monster statue of Buddha. His proposal was accepted and carried into effect by order of the Emperor Shomu (A. D. 724-749). There were formerly three of these statues in Japan, each about fifty feet in height. The most ancient one, in Nara, built 743-752, was in the first place greatly damaged by an earthquake, which caused the head to fall off, and was afterwards destroyed by a fire which broke out in the surrounding temple, so that it had to be entirely rebuilt towards the end of the XIIth century. This statue still exists in Nara, in the interior of a wooden building of remarkable construction. A second one of similar proportions existed in Kiyoto, but was destroyed by fire. The third one is the well-known Daibutsu of Kamakura, and was built in the XIIIth century, of an alloy containing a small percentage of gold. Other specimens of large bronze-castings are found at Nara, Kiyoto, Nikko, Shiba in Tokio, in the famous bells which have an average height of fifteen feet and are more than ten feet in diameter.

Statues of all sizes, bells, vases, water basins, candlesticks, incense burners, lanterns, etc., have been manu-

factured in large quantities for temples and their approaches. Portrait statues, like the monuments erected in foreign countries to honor the memory of celebrated men, have never been made in Japan. As articles for household uses we may mention fire-pots, water-pots, flower vases and basins in which miniature gardens are made, perfume burners, pencil cases, small water-pots of fanciful shapes for writing boxes, paper weights, and small figures representing divinities. These bronze castings are either made in the simple and severe style of the old celebrated Chinese bronzes, or else are specimens of the peculiar character of Japanese art, which chooses its subjects from natural life, either combining them with lively scenes showing a great deal of humor, together with the most minute copying of nature, or else using them to produce an artistic effect, often in a somewhat capricious way quite unexpected to the beholder. Occasionally the artist takes his subjects from Chinese and Japanese mythology, and produces all sorts of legendary animals such as the dragon, the stork, the tortoise, etc., which are largely represented on the candlesticks and other castings used in temples or in the domestic chapels. The bronze utensils of these latter are generally composed of five pieces, two flower vases, two candlesticks, and one incense burner.

The bronze is cast in clay moulds formed upon models made of a mixture of wax and resin, which is melted out from the finished mould previous to pouring in the metal. The artist who makes the model generally does the casting himself, and in most cases the workshops consist only of the master's family and two or three assistants. The melting furnaces are of exceedingly small dimensions, and generally made of an iron kettle lined with clay. After

casting, the piece is carefully corrected and worked out by chiselling, but the best bronze workers prepare the model, the mould and the alloy in such a way as to produce castings which need no further correcting or finishing. In some cases also the whole decoration is produced with the chisel working upon a smooth surface; this, for instance, is frequently done in the provinces of Kaga and Yechiu, which are very important centres of the bronze industry. The bronzing of the pieces is done in many different ways, each manufacturer having his own particular process, which he modifies according to the composition of the alloy and the color he wishes to produce. The chemicals used for this purpose are very few in number, and limited to vinegar, copper sulphate and verdigris as the principal substances; other materials used less frequently consist of iron sulphate, red oxide of iron and lacquer. It may be added as a peculiarity, that an infusion of *Eryanthus tinctorius* is also made use of in the bronzing process.

The ornamentation of bronze castings is not only produced by relief patterns, moulded or chiselled, but also by inlaying the objects with gold, silver, or with a different alloy. This kind of workmanship is called "Zogan," and is principally carried on in the provinces of Kaga and Yechiu. The process by which the inlaid work is effected differs according to the nature of the material on which it is applied. Sometimes the design is hollowed out to a certain depth with a graver or chisel, and the ornamenting metal, silver, gold, etc., generally in the shape of threads, is laid into the hollow spaces and hammered over; should the alloy be soft enough, the edges of these grooves are first slightly driven up, so that when the silver or gold has been laid in they can be easily hammered down again. so

as to prevent the inlaid metal from getting loose, or else the surface is merely covered in the required places with a narrow network of lines by means of filing, and the thin gold or silver leaf fastened on to this rough surface by hammering. This last process is the one used mostly for inlaid iron work. It is also said that the design is often produced by a process very similar to that of the so-called "Niello"; only instead of the black sulphuretted silver and copper, a more easily fusible alloy is used. Inlaid work of the above kind is principally made in Kaga and Yechiu, at Kanasawa and Takaoko, where the alloy used for the bronze casting is mostly composed of copper, tin, zinc and lead.

In addition to the castings, the repoussé work should be mentioned, by which mostly small metallic ornaments for swords, tobacco pouches, etc., and also larger pieces such as tea-pots, scent-burners, vases, etc., are produced. The inlaying of this kind of ware is sometimes of extraordinary delicacy and beauty. The dark blue color shown by a great number of smaller pieces is that of the Shakudo, composed of copper and two or five per cent. of gold.

Finally, attention should be called to the so-called "Moku-me," a word which might be rendered by "veins of the wood." The metal work designated by this name presents a sort of damask pattern, composed of variously colored metals, chiefly white, silver, red copper, and a dark blue alloy. Pieces of this very difficult sort of workmanship are produced by overlaying and soldering together a certain number of plates of the said metals or alloys, by hammering, kneading, resoldering, filling up the hollow spaces with new metal, and repeating these operations many times; finally, when stretched out into a thin sheet, this composition shows the aforesaid pattern

all composed of veins of the different metals that have been used. There is no doubt but that bronze castings, as well as the chiselled or inlaid ware, belong to the most remarkable creations of Japanese industry. Whatever may be the judgment concerning the model and the patterns, it will be admitted that the workmanship, the patience and the skill by which the most complicated forms are produced, as well as the art of combining variously colored metals, merit the highest praise and attention of connoisseurs.

The large bronze Koro (incense burner) in the centre of the gallery was dedicated in the year 1700 to the Sacred Temple of Kanyeizi, in Uyeno, Tokio, where it filled the place of honor until 1867, the year of the overthrow of the great Tokugawa Shogun. The results of the revolution were fatal to the revenues of the priests, who were forced to part with their treasures. The Koro was purchased by a bronze collector in Tokio, whence it found its way to this collection.

Among the noted bronze workers represented in this collection may be mentioned Gorosa, whose descendants to the ninth generation still produce artistic work; Saymin, the founder of a school of workers early in the XVIIIth century, whose designs and castings are unrivalled; also his pupils, To-un, Gui-do, So-min, Shing-amitz, Doo-min, and Ka-ya-sai; of this school there are some fifty examples in the collection.

PAINTING.

The first essays in painting in Japan have left no traces, and the date of these first efforts is unknown. But during the seventh year of the reign of Yuriaku (A. D. 463), this prince sent to Corea in search of artists, and among those who were brought back was a painter named Inshiraga. The productions of this period, however, have not come down to us, and the earliest painting we now possess is the portrait of the prince Sho-toku-taishi. This painting, executed during the reign of the Emperor Suiko, at the beginning of the VIIth century, is preserved as a most precious relic of the past in the temple of Horiuji in the Province of Yamato.

About this period the government created an Administration of Painting, at first called the Guwa-Koshi, which was afterwards in A. D. 808 changed to Edokoro. The style of painting of this period was vigorous, yet of fine detail. Unfortunately little by little a new school was formed, which occupied itself with mere portraits of noblemen in court costumes loaded down with ornaments, a sad falling off in an artistic sense. The principal artist of this school was Tsunetaka, the Director of the Edokoro, whose official title was Tosagon-no-kami. His descendants took later the name of Tosa, which they adopted as their family name, whence the word Tosae given to this school.

In the beginning of the XIVth century appeared the celebrated painters Kao, Meicho, Josetsu, Shubun, and others. These great painters had studied the Chinese paintings of the Tsong and Kin dynasties. Succeeding these was the priest Sesshu, an equally celebrated artist ; and finally Kano-masanobu, the originator of Sagami, and his son Motonobu, were equally painters of great renown. Their descendants have followed in their footprints to our own day, especially the Kano and Tosa families, who have among them several artists of deserved reputation.

During the period of Tenshō (1570) a painter named Iwasa Matabe, a student of the Tosae school, devoted himself to representing the manners and customs of his country. Hishigawa Moronobu, one of his imitators, who lived in Yeddo in 1690, was the founder of the school of Utagawa. About 1720, during the Kiōhō period, a celebrated Chinese painter named Chin-nam-ping came to Nagasaki, where he soon acquired a great reputation and many scholars ; and as he was followed by other artists not less renowned, such as Chinumei, Shabuson, and others, Chinese painting soon became popular and its influence was diffused throughout Japan.

But of all the painters of Japan he who has won the most renown both abroad and at home is Hokusai, born in 1760, died 1849. This illustrious man, like the great Millet of France, drew his inspirations from the labor and daily vocations of the people. He was treated with contempt by the nobles, but beloved by the masses, to escape whose importunities he was often forced to change both his residence and his name. His style has had many followers.

Japanese painting can be divided under two heads. First, paintings which represent historical costumes, furni-

ture, etc.; the characteristic of this work is that it presents the object in all its detail of form, color and appearance, without either shadow or perspective. Second, paintings which represent landscapes, portraits, animals, horticulture, etc., with the same characteristic of truth to nature, but finished under the laws of perspective and shadow. Paintings called *Sumie* are those executed exclusively in India ink. Originally this style was accepted only by the literati and poets, whose love for nature and good taste alone could appreciate them, the popular voice calling for color. Many of the painters who followed this school, desiring to represent serious subjects, have overcome the imperfections in the drawings by inserting verses of poetry. The rules applicable to this style of execution are few and vague, and whilst the execution is always broad, yet certain careful details will always be found.

The favorite themes for these artists are picturesque valleys, steep mountain sides or rocky shores, the desire of the artist being to carry the spectator in imagination to those spots and fill him with his own poetry and the poetry of the surroundings. Of late years much attention has been paid to European styles of genre painting, and already many very good examples of such work show the progress made in this direction.

CARVINGS.

Mr. Audsley, in his "Notes on Japanese Art," very truly says, "Of all the carved work of the Japanese, the most wonderful and interesting are the ivories called Netsukes; these consist of groups of animals and grotesque figures and representations, indeed of nearly every natural object in Japan, most truthfully rendered. It is quite impossible to give any idea in words of the quaint humor, the broad caricature, the intense power of expression, and the general artistic excellence which stamp every netsuke in which the human form appears, with an individuality, distinct from anything of a kindred nature produced in other lands."

As an example of the perfection of the work of these ivory carvers even at the present day, we would call attention to the large tusk, seven inches in diameter, which was exhibited in the Egyptian Department at the Philadelphia Centennial, and purchased by the Japanese, who were commissioned to place it in the hands of the most expert artist in Japan. He took three years to produce this work of art, and chose for his subject the moment when Yoshitsuné, the Chevalier Bayard of Japanese history, betrayed by his Imperial brother, whose throne he had assured, is about to embark upon the vessel which was to separate him from his beloved home forever, sacrificing himself rather than bring civil war upon his country.

CLOISONNÉ ENAMEL.

This industry is largely practiced both in China and Japan. But little is known, however, in regard to its history in China, where it originated, and whence it was introduced into Japan towards the end of the XVIth century. It became the local industry of three villages in the province of Owari, not far from the town of Nagoya. The process consists of soldering the edges of flat brass wires on the surface of copper vessels, and filling in the cells formed by the winding and crossing of this wire, with vitrifiable colors, which are then baked, ground and polished.

The design to be produced is given to the workman drawn upon paper. He covers it with a plate of glass, and bends the wire to fit the lines of the design until all are reproduced. He then fixes the shaped wire design upon the copper vessel by means of a gummy decoction, made of the root of a kind of orchis. When the wire has been all thus attached, it is further fastened in place with brass solder and borax, applied with a brush wherever required; and the piece is baked in a charcoal fire. The cells thus formed are then filled with vitrifiable enamels and fired; this latter process has usually to be repeated several times before the requisite thickness and uniformity is acquired; the surface is then ground down with coarse and fine-grained stones, and finally polished with charcoal.

At Kiyoto, Osaka, Tokio, and also in Owari, porcelain objects are treated in the same manner. For this purpose the parts to receive the application are either left unglazed, or the glaze is ground off and the wires fastened, not with solder, but with a very fusible glass.

Great quantities of cloisonné enamels are annually exported from China and Japan. The general style of the Chinese decorations on these objects is similar to that on their bronzes, and the combination and quality of colored enamels is often very effective; flower designs are also occasionally met with. Early Japanese cloisonné workers copied these designs, but soon adopted their own national characteristics of decoration. The dragon, the hoho, and other mythological creatures, and even human figures and landscapes, are reproduced by the Japanese enamellers.

ANCIENT POTTERIES.

PREHISTORIC.

The Ceramic Art is the oldest and most universally practiced of all the arts. It was admired before any knowledge or experience of Sculpture or Painting existed. It has affected the taste of every people with or without a claim to culture. From the prehistoric age to the present time it has been continuous ; in the history of all nations it has been where art began. When the Egyptian or Indian smeared his earthenware with poor color and drew a zigzag line with a stick around his clay vessel, he revealed the incipient symptoms in the direction of art in decoration as well as in form.

The period which elapsed between the time of the formation of these first simple vessels from dried clay, and of the highly fused and refractory porcelain, has been thousands of years, and the steps of progress slow and uncertain ; nor can any date be fixed for the origin of baked clay pottery. Its production was primeval with the earliest dates of historical records, the oldest and most valuable of which are burial places and tombs ; of these many have remained unopened and undiscovered for decades of centuries. Rudely shaped vessels of baked clay are found in the lake dwellings of Switzerland and in the sepulchres of the primitive inhabitants of Northern Europe. Dates can only be affixed to these by approximation, and doubtless many belong to the Stone Age. The earliest dates which can be affixed with any degree of precision are to vessels of burnt clay discovered in Egyptian tombs built 2500 years B. C.

EGYPTIAN.

The Egyptians, centuries before our era, produced small objects such as amulets, charms, small figures of gods, scarabei, etc., by carving them in a kind of soapstone, which was covered with glaze and baked, thus producing a kind of pottery. Scarabei have been found bearing the date of 2020 B. C.

The artistic Egyptian pottery is siliceous, between earthenware and porcelain, its grain is very fine, resisting the greatest heats, and it is generally covered with thin glaze, colored blue or green by oxides of copper. Soft pottery was produced from the earliest ages; it was generally unglazed and undecorated, though sometimes ornamented with geometrical figures. Since the time of the Ptolemies a lustred ware has been made ornamented with characteristic but inartistic paintings; after the Ptolemies Egyptian art lost its originality, influenced by the Greeks and afterwards by the Romans during their domination.

The Israelites produced in Judea the same kind of pottery which their forefathers had made in Egypt before their expulsion; this is seen in fragments at the Louvre, which show the same siliceous earth enamelled in blue.

ASSYRIAN.

Assyrian pottery was the stepping-stone from Egyptian to Grecian, and is principally known by bricks of a slightly rose-white earth, with a surface not enamelled but covered with a glaze, the predominant color of which is the turquoise blue. A date anterior to 522 B. C. can be affixed with certainty to the production of this pottery, as

in that year Darius destroyed the city of Babylon, among whose ruins many of these bricks have been found. Mr. Loftus reports that he found at Warka bricks bearing the name of Uruk (about 2200 B. C.). They were generally ornamented with arabesques, but several walls have been uncovered, decorated with paintings of figures, animals and trees.

Assyrian coffins are found of baked clay covered with a green glaze, and contain among other things objects of pottery and earthen figures, some of which are modelled with delicacy. They learned the art of glazing from Egypt and became very perfect in its use. We find pieces carefully embossed and enriched with green, yellow, brown, and various other colored glazes, and they seem to have made gold decorations at an early date. Later, when the Greeks spread their influence through Asia Minor, their artistic influence can be traced upon the work of Assyrian potters.

One of the first uses made of pottery was as tablets for records; impressions were made on soft clay, which was then fired. Some of these tablets have come down to our age in perfect condition, and have proved invaluable historical records.

PERSIAN.

Persian earthenware and fayence are of many kinds, but our knowledge regarding their production is so uncertain that it is difficult to affix any accurate dates. The earliest pottery extant is supposed to be a metallic lustred ware, which it seems reasonable to believe was produced several centuries before our era. It is certain that the Arabs, after their invasion of Persia in A. D. 636, learned there and carried into Spain the art of making the lustred ware now

known as Hispano-moresque. In Persia, fragments have been found among the debris of the older ruins of Rhages, which was finally and totally destroyed in 1250 B. C. These fragments are of two colors: yellow of various shades and lapis lazuli blue. Tiles with metallic lustre have also been found among the ruins of Rhages and date back to a remote age. None have been made since the time of Shah Abbas (A. D. 1582-1628), the art apparently having been lost. Some of these tiles are found eight feet in length, they are ornamented with figures in relief, and occasionally bear inscriptions.

Next in importance to this lustred ware is a very beautiful and close-grained earthenware, of which Chardin, writing about 1600, says: "The earth of the fayence is of pure enamel, like Chinese porcelain, and it has a grain just as fine and transparent, which very frequently renders it difficult to decide whether an object is Persian or Chinese." This difficulty is increased by the fact that we often find Chinese marks on pieces evidently made of Persian earth, which is entirely different from any known to exist in China. But this merely goes to prove the imitation of Chinese pieces and the importation of Chinese workmen.

Persia up to the end of the time of Shah Abbas, or about A. D. 1628, was the central point of the route between China and the West, thus many Chinese objects made prior to this date are found in Persia. An officer of the British government made a large collection of such Chinese objects, which are now in the South Kensington Museum. Sir John Malcolm, in his "History of Persia," tells us that in 1256 twelve hundred families of Chinese artisans and engineers came to Persia and there plied their trades.

Persia still attempts to make this fine-grained earthen-

ware, but with very little success. On objects of recent date the glaze is more vitrified, the colors less pure and blended in the glaze, and the designs poorly executed. The usual color of these pieces, azure blue on a white ground, is known as blue and white. Another kind was of a more porous, softer, but thicker paste, of coarser workmanship and generally inferior, still occasional pieces of much merit are found executed in various colors, red, lapis lazuli, yellow, blue, etc.

Another variety still thicker and coarser, the paste more or less dark in color, and the glaze thick and very white, resembles to some extent the stanniferous earthenware invented by the Arabs early in the XVIth century. Some of these objects are covered with a solid color which, when of lapis lazuli blue, is very brilliant. We also find a white earthenware translucent which has been considered by many to be a porcelain.

Chardin speaks of the porcelain of Karamania as resembling that of China, and Pliny also alludes to a substance found in Karamania of which murrhine vases were made. The chief place of manufacture was Kashan and its neighborhood, including Nain, where good clay is still found. Cobalt, the color chiefly used, is also found at Kashan. Near Meshed a stoneware was made of blueish soapstone, which was cut and hollowed out of one solid piece into teapots, coffeepots, cups, bowls, etc.

PHCENICIAN.

The original inhabitants of Phœnicia were probably nomads, who wandered along the Persian Gulf and Arabian Sea, and settled in Phœnicia. They developed into a nation of traders, soon learned what their neighbors were

doing, and, profiting by experience, surpassed them in development and utilized their products in commerce; they became the commercial people of the early ages and pioneers of the sea; they established colonies in Asia Minor, Crete, Lydia and Greece as early as 1500 B. C., and later in Rhodes, Sicily, Sardinia and Spain (where they built the city of Cadiz); their vessels sailed to the Scilly and British Isles, and into the North Sea. It is even said that they circumnavigated Africa.

In 1440 B. C., the Israelites from Egypt settled as neighbors in Palestine, and brought with them their arts and its influences. During Solomon's reign the first voyage to Spain was made, and the vessel returned laden with gold, iron, silver, tin, lead, etc. About 555 B. C. Cyrus broke the Assyrian rule, and they passed under the Persian yoke. About 330 B. C. Alexander with his Macedonians conquered Persia and Phœnicia, and in 65 B. C. the Romans subjugated them.

Some writers claim that the common pottery of Phœnicia was primeval with that of Egypt. At first the Phœnicians made a very simple unglazed and undecorated pottery, gray in color, and copied nature or drew upon their imagination for forms. Later they ornamented this same pottery with rings and other geometrical lines in black or red. About this time Egyptian influence began to show itself, and very soon glazes were applied. A lustre seems to have been produced by them at an early period. A pottery decorated with black figures on red ground and red figures on black ground was made from about 500 B. C., after which date Phœnician potters made no progress, their country became a prey to the invaders and internal dissension, and art was lost or forgotten.

GRECIAN.

Clay pottery may be said to have reached its perfection under the artistic hands of the Greeks, whose exquisite shapes, designs and decorations, perfecting the slow progress of the Egyptians, raised it from the position of merely filling household wants, to that of a vehicle for expressing the rapid and wonderful development of Greek art. The earliest specimens of Greek pottery date back to about 800 B. C., and in some cases show traces of Eastern influences in their decoration. The earliest Greek pottery was made at Samos, Athens, and Corinth, and was slightly lustred. It was produced from yellowish earth, and fashioned into very simple forms which were, in the beginning, copied from Egyptian models, and indeed made by Egyptian hands, but soon the Greeks, accepting and improving the civilization of the Egyptian colonists, developed their industries and their arts, and acquired the secrets of making the finest ceramic pastes. If we may credit Herodotus, the potteries at Samos existed ten centuries before Christ. It was as modellers and not as decorators that the Greeks especially excelled. Phidias and other celebrated artists furnished designs for the potters.

From the defeat of the Greeks at Cæronia (338 B. C.), by Philip of Macedon, which left their country little better than a Macedonian province, we date the decadence of their arts. From their alliance with the Romans to the capture of Corinth, when they passed under the Roman yoke, ease and luxury also had corrupted them and finally in our IVth century the barbarians swept their country and destroyed even the remains of this nation to whom we owe so much that is pure and beautiful in art.

ETRURIA.

Etruria, according to Herodotus, was settled by a colony of Lydians, the wealthiest and most luxurious people of Asia Minor, to whom it is by some supposed, and with reason, the Greeks owe the earlier development of their arts and sciences, which would account for traces of eastern ornamentation on early Greek work. Vases of beautiful design, ornamented in relief, and with paintings in black outline, have received the name of Etruscan vases, but of late years it has been clearly proven that the most of these are of Greek origin, only copies having been made in Etruria. A red lustred ware was made at Arezzo, in Etruria, and also a red earthenware covered with black glaze and ornaments in relief. Among the ruins of Carthage (destroyed 146 B. C., and afterwards by Arabs in the VIth century), amphoræ have been found, supposed to have been from Etruria, inscribed with the names of Marius and Longinus. Etruria was at the height of its splendor when Rome was founded, 754 B. C., and before it attained the height reached by Greece it was destroyed by invasion and internal dissensions. Excellent in jeweler's work, the Etruscans were never pre-eminent potters.

ROMAN.

Roman pottery owes its origin, as do all the Roman arts, to the Greeks. Both potters and artists were brought to Rome as prisoners, were liberated, and induced or forced to produce. The result was a Græco-Roman Art. The most interesting development of pottery due to the Romans are the terra-cotta bas-reliefs, with which they orna-

mented their houses. That these decorations were first executed by Greeks is indicated by the subjects, but the development is due to Roman taste. Little terra-cotta figures of heroes and gods were placed in every household, after the habit of the Greeks.

EUROPEAN POTTERIES.

SPAIN AND MAJORCA.

The Arabs held sway in Spain from the year A. D. 710 until nearly 1100; the Moors conquered the country and established the kingdom of Granada in 1235. It is known that potteries had been established in Valencia previous to its capture by the Moors under Jayme I, of Arragon, in 1239. What was produced previous to this date is unknown, but this date can be affixed with certainty to the production of lusted stanniferous enamelled pieces known as Hispano-moresque.

This lustre and stanniferous enamel was undoubtedly introduced into Spain from Persia through Arabia. We think the supposition correct that this same ware was produced on the island of Majorca as early as, if not before, 1235, and was largely exported into Italy, where it was called Maiolica ware (Maiolica being the old pronunciation of Majorca).

Majolica, if correctly applied, would designate only lusted stanniferous enamelled ware produced upon the island. But modern custom has made the word apply to all the Italian enamelled wares produced since the time of Lucca della Robbia.

ITALY.

The earliest objects of Italian impermeable potteries are those found in the Presbytery of the Church of San Maria-a-Mare, built in the XIIIth century at Castro-Nuovo, and those of the steeple of Atri, dating about the year 1279.

Of course we do not mean to exclude the fragments found at Tarsus and preserved in the museums, which date back to the Greco-Roman period, and bear evidence of plumbeous glaze.

But the use of stanniferous enamel was not perfected in Italy until about 1432, by Lucca della Robbia (1400-1481), who applied it upon a terra-cotta base and produced a new ware erroneously called Majolica. The earliest date affixed to a piece of Lucca della Robbia's work is 1438, and is not lustred. Lucca della Robbia was brought up a goldsmith, and subsequently studied sculpture; he was a pupil of Ghiberti, and is reputed to have assisted him in making the superb bronze gates of the Baptistery of the Cathedral at Florence.

The earliest date upon a piece of Italian lustred ware is 1489. After 1570 its production decreased rapidly; the earlier Italian lustred pieces are now called Mezzo-Majolica, because, unlike the majolica ware, they were lead and not tin glazed. The ground was of a buff color, which was sometimes, before glazing, covered with a thin coating of fine white clay, making it resemble more the true majolica. The sgraffati or incised ware was produced by engraving through this white surface and exposing the terra cotta beneath. This mezzo-majolica was first produced at Pesaro, in whose archives it is frequently mentioned, and afterwards at Gubbio and Diruta.

Federigo de Montefeltro, the second Duke of Urbino (1444-1482), both soldier and scholar, did much to assist and incite the production of artistic work of all kinds. Lucca della Robbia produced works for him. Under the third Duke of Urbino, Guidobaldo (1482-1508), stanniferous enamel or true majolica was produced at Faenza,

Florence, Urbino, Pesaro, and other places in Italy. The production increased and was perfected under succeeding dukes until 1631, when Francesca Maria II, the sixth and last Duke of Urbino, died, and the artists losing their protectors soon lost their art. The rich collections which had been formed at the palaces of the Dukes of Urbino fell into the rapacious hands of Ferdinand de Medici and were removed to Florence. Attempts to revive this industry have been several times made with mediocre success, and at the present day Ferlini in Bologna, Ginori in Doccia, Joseph Devers in Paris, and Minton in England, imitate della Robbia's ware, and recently some very fair specimens of lustre have been produced.

The development and increase of the production of majolica in Italy were due to the protection and assistance of the noble families which arose to power and distinction in Italy during the XIVth, XVth and XVIth centuries, especially to the six Dukes of Urbino (1443-1631), and to the Medici family, who first appeared in Florence in 1380, attained great power under Lorenzo, about 1350, and were banished from 1498 to 1512, when they returned to attain greater influence and wealth. After 1631 the dukedom of Urbino reverted to the Pope, who failed to encourage or assist the artists in the production of fine work, and soon the invasion and conquest of Italy by Charles V, of Spain, overturned the existing noble families and inaugurated a new order of things. About this date Oriental porcelain was introduced, and it superseded the production of majolica, which soon became almost a lost art.

At Castelli, near Naples, in 1450, mezzo-majolica was produced, and from 1525 to the present day, stanniferous enamelled faience has still been made. Beautiful pieces were produced at this factory in the XVIth century, and it

was from here that Naples called artists to found its potteries in 1524.

The Royal Factory of Capo-de-Monte was founded in Naples in 1736 by Charles III. A kind of porcelain and a very beautiful faience were produced. This factory is still noted for its artistic *bas* and *haut* reliefs, which are beautifully colored.

GERMANY.

To Germany is due the credit of producing in Europe the first impermeable modellings covered with enamels. These, dating back to the XIIIth century, are found in its churches, and indeed in the Museum of Nuremberg are some enamelled blue and white tiles which date between 1150 and 1200, from the Church of St. Peter's at Rostock. Brongniart erroneously says this impermeable mineral varnish dates only from the XIIIth century, whereas both the ancient Egyptians and Greeks used it. He also says stanniferous enamel was the invention of Lucca della Robbia, when in fact the Egyptians, Arabs, Persians and Greeks all employed it. Its introduction into Italy is easily traced from Persia, but the route of its introduction into Northern Europe is more obscure. It was known and produced in Germany as early as A. D. 1200, and the secret of its production must have come from Persia.

Germany's influence upon the development of the potteries of Europe was very great. She sent workmen direct into Holland, Flanders, Northern France, England, Denmark, Sweden, and even Portugal; and in all these countries factories were established by Germans. Even Bernard Palissy received his incentive from Germany.

No city in Europe has played a more essential part in

the advancement of the arts than Nuremberg. As early as the year 1300 her artisans had produced little figures in unglazed clay, and stanniferous and plumbeous enamelled ware in 1400, perhaps even prior to this date; and finally in 1712 the soft paste porcelain. The family of the Hirschvogels, potters, and painters on glass, consisted of five artists; the grandfather who lived from 1471 to 1553; his three sons, Veit, August and Hans, and a grandson Sebald (who died in 1589), the son of Veit. Their work was in the style of the Italian majolicas, but more brilliant in color; their clay came from near Amberg.

HOLLAND.

The earliest marks found upon pieces produced at Delft date from about 1600, a century and a half after the introduction of Chinese porcelain into Europe, although some authors carry its existence back to 1310. It is best known by its copies of Chinese and Japanese porcelain. The best work was done about the commencement of the XVIIth century. The quality of the Delft is finer than any other European faience; in some cases it almost rivals the Chinese porcelain; lustred pieces were also produced at Delft. It is remarkable that Delft and the factories of Germany should have attained such perfection, through the efforts of individuals alone, without any assistance from noble patronage or donation. It is an error to suppose that the factory at Delft was founded by Italians; it undoubtedly owes its origin to Germany, and its first works were produced by German artists.

FRANCE.

BERNARD PALISSY.

"Povreté empêche les bons esprits de parvenir."

Bernard Palissy was born in the village of Lacapelle-Biron, in Périgord, about 1506. He worked first at painting glass, and following this occupation wandered over France, Germany, the Netherlands, and as far south as the Pyrenees. In 1538 we find him at home at Xaintes, where he marries and becomes the father of a large family, is reduced to extreme poverty and avows himself an ardent Protestant. About 1540 an enamelled cup from a factory at Nuremberg having fallen into his hands, he set to work, unaided, to reproduce it. After years of misery and privation he succeeded, and soon, under the patronage of the Parthenay, Pons and Soubise families, the expounders of Protestantism, his artistic work became known, and Anne de Montmorency gave him her protection. In 1562, but for her intercession, he would have lost his life on account of his religion, which he professed openly. In 1563 we find him living at La Rochelle, where he published one of his works. Very soon after this he moved to Paris and became the firm friend of Jean Goujon, his co-religionist, who was killed at the Massacre of St. Bartholomew in 1572. Palissy escaped under the protection of Catherine de Medici, who in 1562 had conferred upon him the title of "Inventor of the Rustic Potteries to the King and Queen Mother."

From 1575 to 1584 Palissy delivered courses of public lectures, which were attended by his most learned contemporaries. Finally in 1587, at the age of eighty-one, on account of his religion, he was thrown into the Bastile,

where he died about 1590. Henri III paid him a visit there and exhorted him to change his religion, saying: "I have been constrained to give you up to your enemies." "Sire," answered Palissy, "you have often said that you pitied me, and now I pity you who have just said 'I am constrained.' Those are not the words of a king. I am ready to give my life for the glory of God, and whatever regret I may have had has passed away in hearing my king pronounce the words, 'I am constrained.' That, Sire, neither you nor those who have constrained you can effect with me, because I know how to die."

Palissy was an author, an engineer, a geometrician, a naturalist, a philosopher, an artist, and a martyr. His potteries, original in design and execution, have been imitated and reproduced down to the present day. His moulds, which he carefully preserved, were sold at his death and used by his successors. The principal imitators of his style to-day are MM. Pull and Barbizet at Paris, the Avisseaus at Tours, and Minton at Stoke-upon-Trent in England.

HENRI II WARE.

The author and production of the seventy-two pieces called Henri II or Diane de Poitiers ware are still clouded in mystery, but everything tends to prove they are the production of several artists, working in different localities and at different periods, in imitation of a style which had pleased the fancy of the King. Most of them were made near the close of the XVIth century, and are formed of a kind of pipe-clay. From the fact that most of these pieces were found in Tourraine we conclude that they must have been produced there. A number of them bear the arms of France and the monogram of Henri II.

Only one object, a plate in the South Kensington Museum, bears any mark and this is unintelligible.

There has been much discussion and several works published in reference to this remarkable ware, without, however, clearing the mystery about its production.

ROUEN.

The first factory at Rouen was established about the year 1640, and a second one in 1673, by workmen from Delft, whose rival it became until the Sèvres monopoly arrested its progress.

ENGLAND.

It was not until the last century that English potters made any progress in the artistic development of their productions; previous to that time objects of common baked material for household uses alone had been made. Towards the middle of the XVIIIth century several factories with artistic pretensions were founded, the principal of which were Bow, about 1735; Chelsea, 1735; Bow Chelsea, 1749; Astbury (Wedgwood), 1750; Derby, 1751; Worcester, 1751; Stoke-upon-Trent, 1778; Swansea, 1790, and others. All of these factories seemed to have used kaolin from the start, and, therefore, to have produced a kind of porcelain some of which is translucent and some opaque. Soft paste was made at Bow, Chelsea, Derby, Worcester, and an intermediate porcelain at Bow Chelsea and Stoke-upon-Trent.

Porcelain of all kinds was made at Astbury, where Josiah Wedgwood was born in 1730, and died in 1795. This remarkable man, the pioneer in the production of artistic porcelain in England, introduced and worked in

many styles, but copied more than he invented. One of the most important of his successes was that he attracted the interest of persons of rank, who previously in England had paid no attention to the art; in this he was greatly aided by his partner, Thomas Bentley.

Much of the later success of Wedgwood was due to the excellent taste and beautiful designs of the sculptor, John Flaxman, whom he first employed about the year 1775. Flaxman, after completing his art studies at the Royal Academy, located in London, and furnished both drawings and modellings; subsequently, in the year 1787, he went to Rome, whence he continued those classical compositions which have made the Wedgwood ware so noted.

Whatever was accomplished in England in this branch of art was accomplished by individual efforts, unaided by royal patronage.

EUROPEAN PORCELAIN.

DRESDEN.

The date and place of manufacture of the first true porcelain in Europe is very naturally a question of dispute. It has been claimed that about the year 1500, at Pesaro, in the Duchy of Urbino, porcelain was made. This statement has not been proven, however, and most probably the product was merely a faience of extra fine grain and superior whiteness. The earliest definite information we have points to John Frederick Böttcher as its first manufacturer. Böttcher was a native of Shleiz in Vogtland, Saxony, where he was born in 1682, and from overwork and dissipation died in 1719, when but thirty-seven years old. He studied chemistry, and was reputed to have discovered the "Philosopher's Stone." He was appointed alchemist to King William the First, and having rebelled against the surveillance exercised over him, fled from his court, was captured and confined in the fortress of Königstein, whence he was taken to Dresden and kept under lock and key. For many years the production of porcelain had been a goal sought for by the chemists of Europe, and Böttcher had spent much time in the search. One day, by chance, he made the discovery. He bought a new powder, called "Schnorr's White Powder," for his wig, and noticing that the powder had great weight and a fine grain, he experimented with it in his crucible and discovered it to be the kaolin of the Chinese.

The first porcelain factory was at Albrechtsburg, in Meissen, and was a veritable fortress, surrounded by a

moat. The secret of its manufacture was guarded in the most rigid manner, under a penalty of imprisonment for life to him who should betray it. Notwithstanding these precautions the secret escaped, and, one after another, factories were established. That at Meissen, called the Royal Saxe, because it was under royal patronage, was established in 1704. Böttcher is said to have produced porcelain here in 1707, but it seems doubtful whether it was before 1712 or 1713, as kaolin is not known to have been used even as a wig powder, by Schnorr, until 1711. The pottery produced here, from 1704 until porcelain was made, was of a dull reddish brown, generally unglazed. After 1705 this ware was sometimes polished. A few pieces with colored enamel decorations in relief, were also made at this period.

VIENNA.

In 1718 Samuel Henzel went from Meissen to Vienna, and under the direction of a Belgian, Claude du Pasquier, established a factory of porcelain, which, in 1744, was purchased by Maria Theresa; from 1785 to 1815 some of the most artistic porcelain of Europe was produced here; beginning with 1815 the quality of the work gradually declined until 1867, when the factory ceased to manufacture. One of the most remarkable products of Vienna was the massive incrustations of gold invented by Herold, who had been the Director at Meissen from 1721 to 1731.

SÈVRES.

Next in chronological order of the four Royal factories is Sèvres. The two brothers Dubois, one a modeller, the other a painter, came in 1725 from the factory at St. Cloud

to Chantilly, then under the patronage of the Prince de Condé, where they produced objects of *pâte-tendre*. In 1738 they established a new factory at Vincennes, which was, in 1740, transferred to Sèvres, where they continued to produce objects of soft paste. No marks were used until after 1753, when Louis XV purchased a third interest in the factory, and extended to it his royal patronage.

The ground colors which have been most admired as the production of Sèvres are: *Bleu Turquoise*, also known as *Bleu Ancien* or *Bleu du Roy*; *Gros Bleu*, also known as *Bleu Royal* or *Beau Bleu*; *Bleu Turc* or *Turquin*, which is not the turquoise, but a pale grayish blue; *Gris d'Agathe*, *Purpre*, *Carmin*, *Bleu lapis*, *Vert* and *Jaune*. *Rose Pompadour* or *DuBarry* was invented in 1757 by Xhrouet, who received one hundred and fifty livres as a reward for his invention. The first jewelled Sèvres was made in 1780, not earlier as claimed by some writers. The first soft paste was produced between the years 1740 and 1769. In 1769 kaolin was found at Limoges, and the brothers Dubois produced the first hard paste or true porcelain at Sèvres. From 1769 to 1804 hard and soft paste were produced simultaneously; from 1804 to 1807 hard paste was alone made. Since 1847 Sèvres has again produced both. All manner of protection was given to this factory by the royal patronage. In 1760 an edict from the Council forbade the use of any color or gilding, with the exception of blue, in any other factory in France than Sèvres. Such arbitrary laws were hurtful to general progress, since they excluded competition, its very life. Under the direct royal patronage and purse, the orders received or extorted from the nobility and the influence of the artistic period in France, Sèvres soon outstripped all competitors.

Sèvres has always employed artists of great merit.

Among those in our own day are Béranger, Huard, Robert, Hamon, Van Marcke, André, Troyon, Solon, and many others. Its most notable Director was Brongniart, who held that responsible position from 1800 until 1847.

BERLIN.

Berlin, the fourth Royal factory, was first established in 1750 by a merchant named Wegeli. In 1761 it belonged to the banker Gottskowski, who, in 1763, sold it to Frederick the Great for the then enormous sum of eight hundred and forty thousand francs (about the value of six hundred thousand dollars to-day). This royal factory has produced only true porcelain. Frederick took great interest in his purchase, and among other decrees issued by him for its advantage was the following, repealed in 1787: "That in place of other special levies upon the Jews, each Jew should upon his marriage purchase from five to twelve thousand thalers of porcelain according to his estate." This resulted in great injury to this beautiful porcelain, and drew upon it the name of the porcelain of the Jews. Berlin had the honor in 1791 of having as one of its "Commissioners on Colors," the great Alexander von Humboldt. At Berlin were produced many fine works and of great varieties. The decorations have been fully equal to any factory outside of Sèvres, whose fine pieces were sometimes reproduced, but always under the Berlin mark.

Lithophanie was here invented; it consists of making pictures in which the shades are produced by varying the thickness of the paste. Whilst at this factory Pott invented the method of transferring line engravings or colored prints to porcelain.

True porcelain, or, as it is often called, hard paste porcelain, is composed of petunse and kaolin with a kaolinic glaze. In baking it requires the highest temperature of a white heat to effect the proper junction between the particles of petunse, which never fuses, and the kaolin.

The only colors which will not burn out under this great heat are cobalt blue, and a dull red used by the Chinese. These two colors, therefore, are the only ones found applied under the glaze on true porcelain; all others have to be applied as an enamel upon the surface of the glaze, and fixed by a second baking at a lower temperature. The imitation of porcelain, known as "soft paste," was made in Europe before the discovery of kaolin, and therefore lacks the important element of true porcelain. Its paste consists of petunse and a composite substitute for kaolin formed of nitre, sea-salt, alum, soda, gypsum, white chalk and marl, which are varied in different factories.

This paste, like that of true porcelain, is translucent, it is soft to the touch, and bakes at a low temperature. In the oven great care has to be exercised, as the least excess of heat will reduce it to fragments. For this reason also hard kaolinic glaze, which requires great heat, cannot be used upon it. The glaze applied must be such as will fuse at a low temperature; alkaline or plumbeous compounds are therefore used, which, after firing, can easily be scratched with a steel. This quality we presume has led to the misnomer of soft paste porcelain.



PLATE A.

FIG. 1.



FIG. 2.

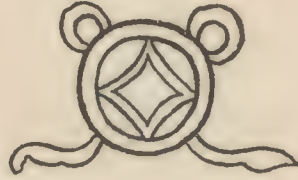


FIG. 3.

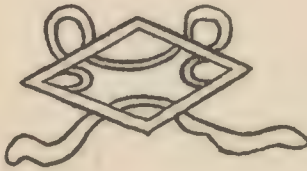


FIG. 4.



FIG. 5.



FIG. 6.

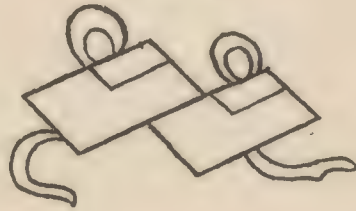


FIG. 7.

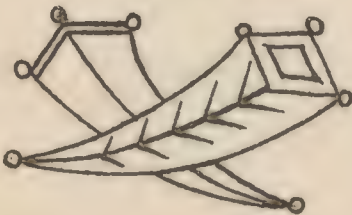
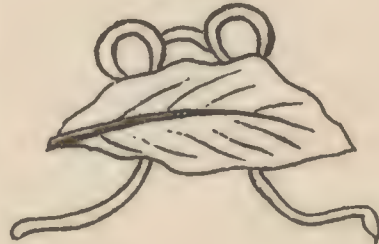


FIG. 8.



SYMBOLICAL ORNAMENTS.

PLATE B.

FIG. 9.

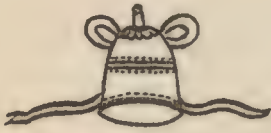


FIG. 10.



FIG. 11.



FIG. 12.



FIG. 13.



FIG. 14.

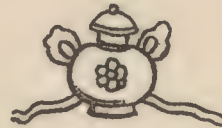


FIG. 15.



FIG. 16.



SYMBOLICAL ORNAMENTS.

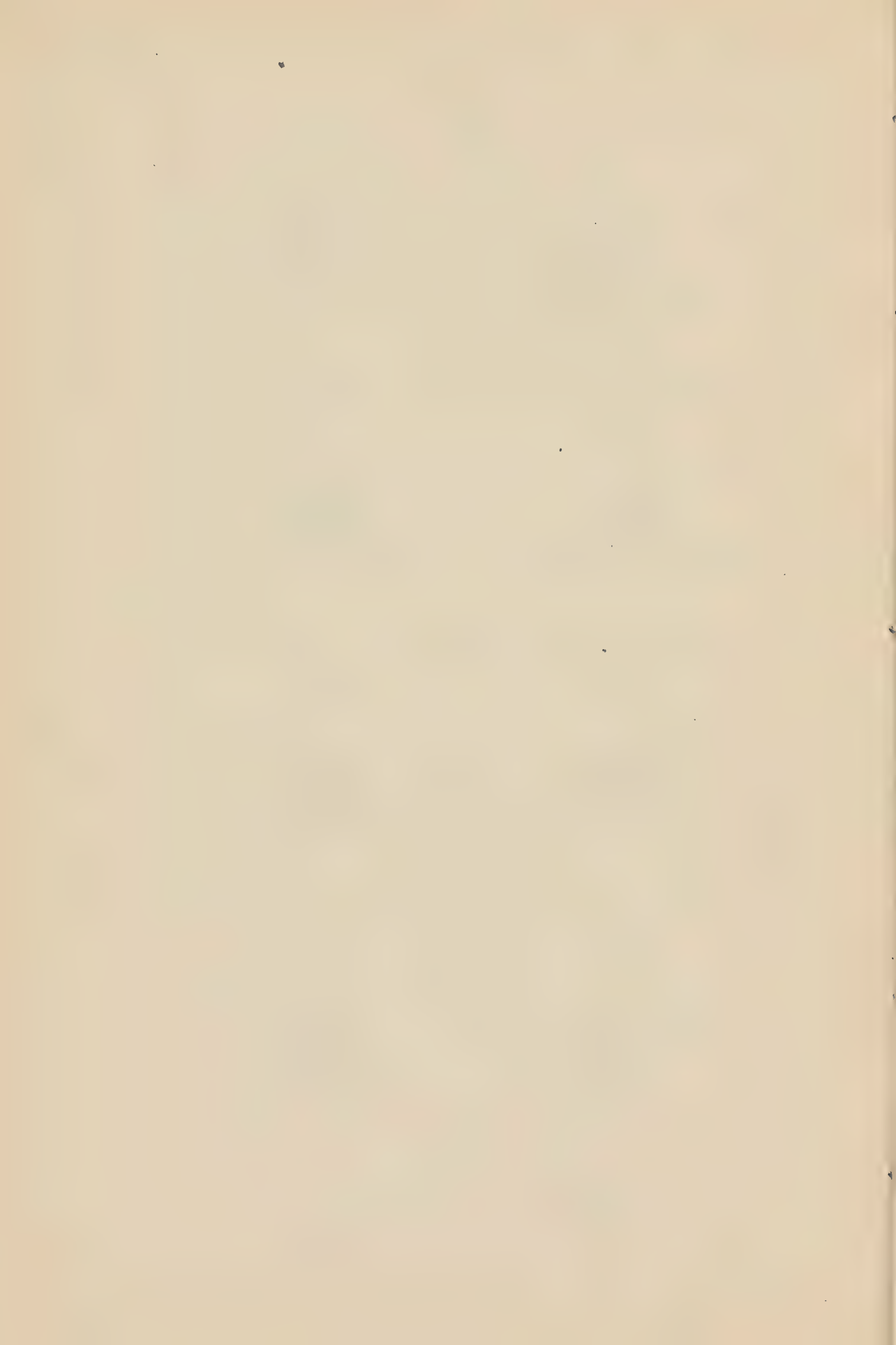


PLATE C.

FIG. 17.



FIG. 18.

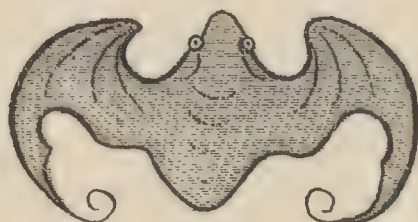


FIG. 19.



SYMBOLICAL ORNAMENTS.

PLATE D.



HAN CHUNG-LE AND LEU TUNG-PIN.



LE TEE-KWAE AND TSAOU KWO-KIU.



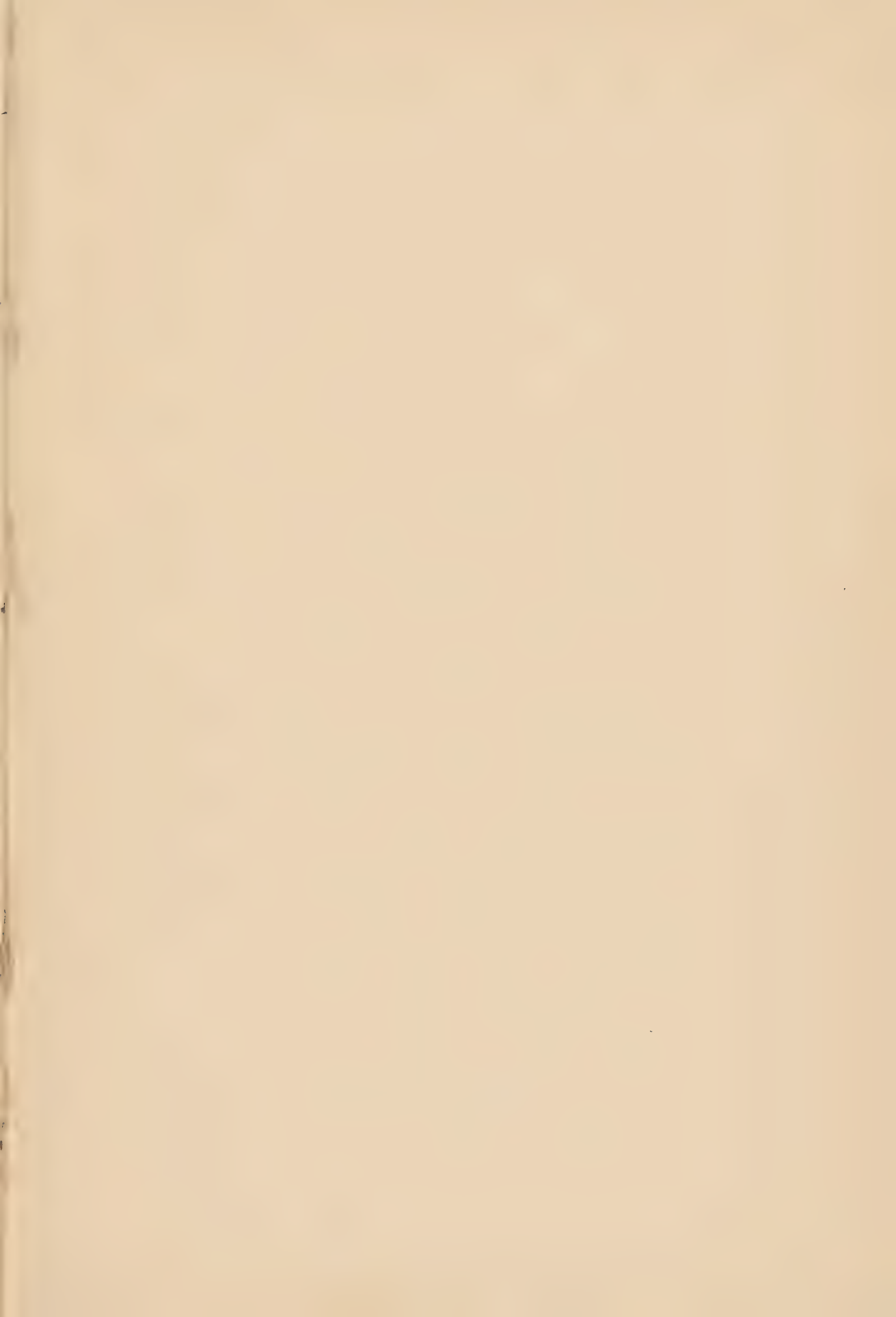


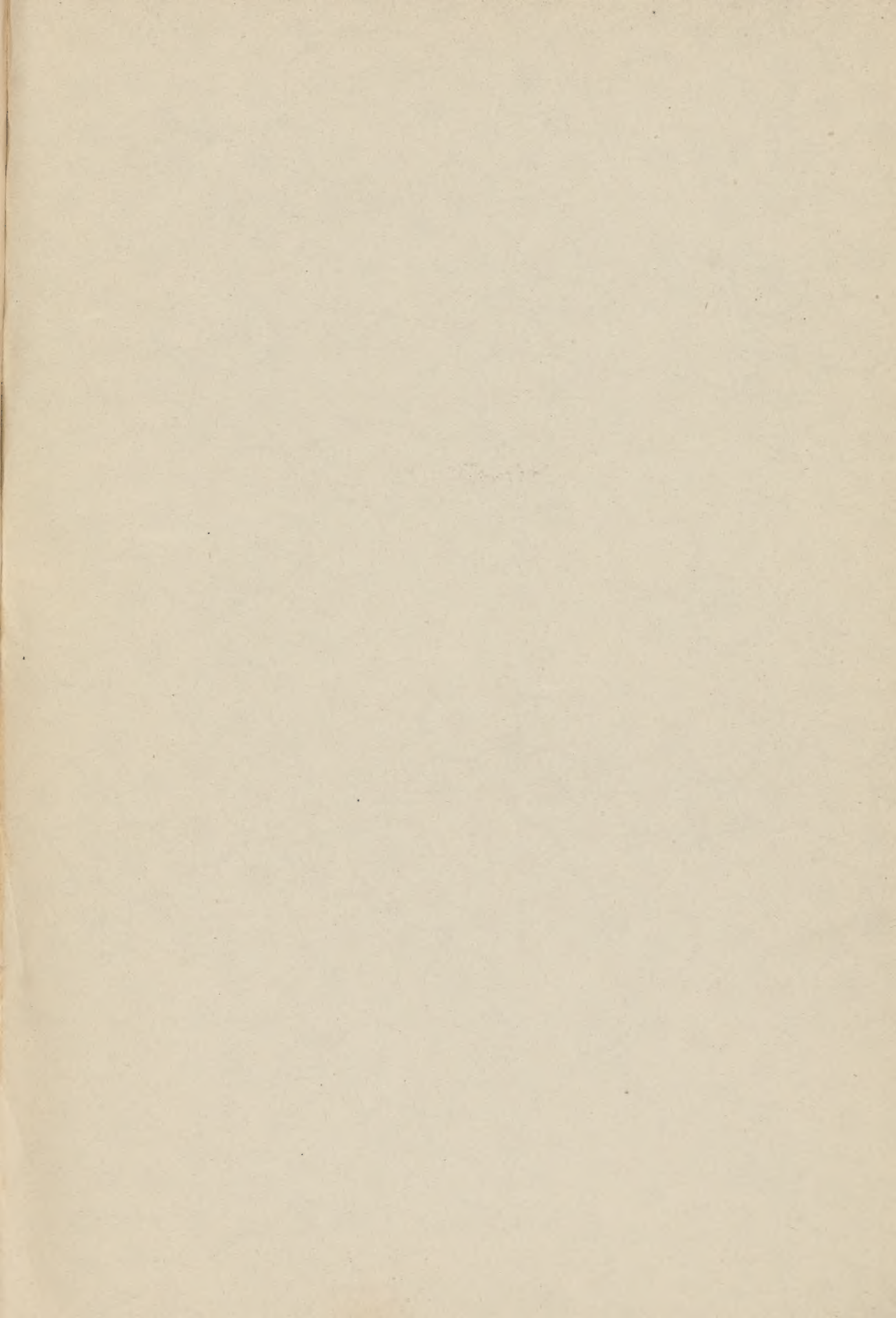
LAN TSAE-HO AND CHANG KO-LAOU.

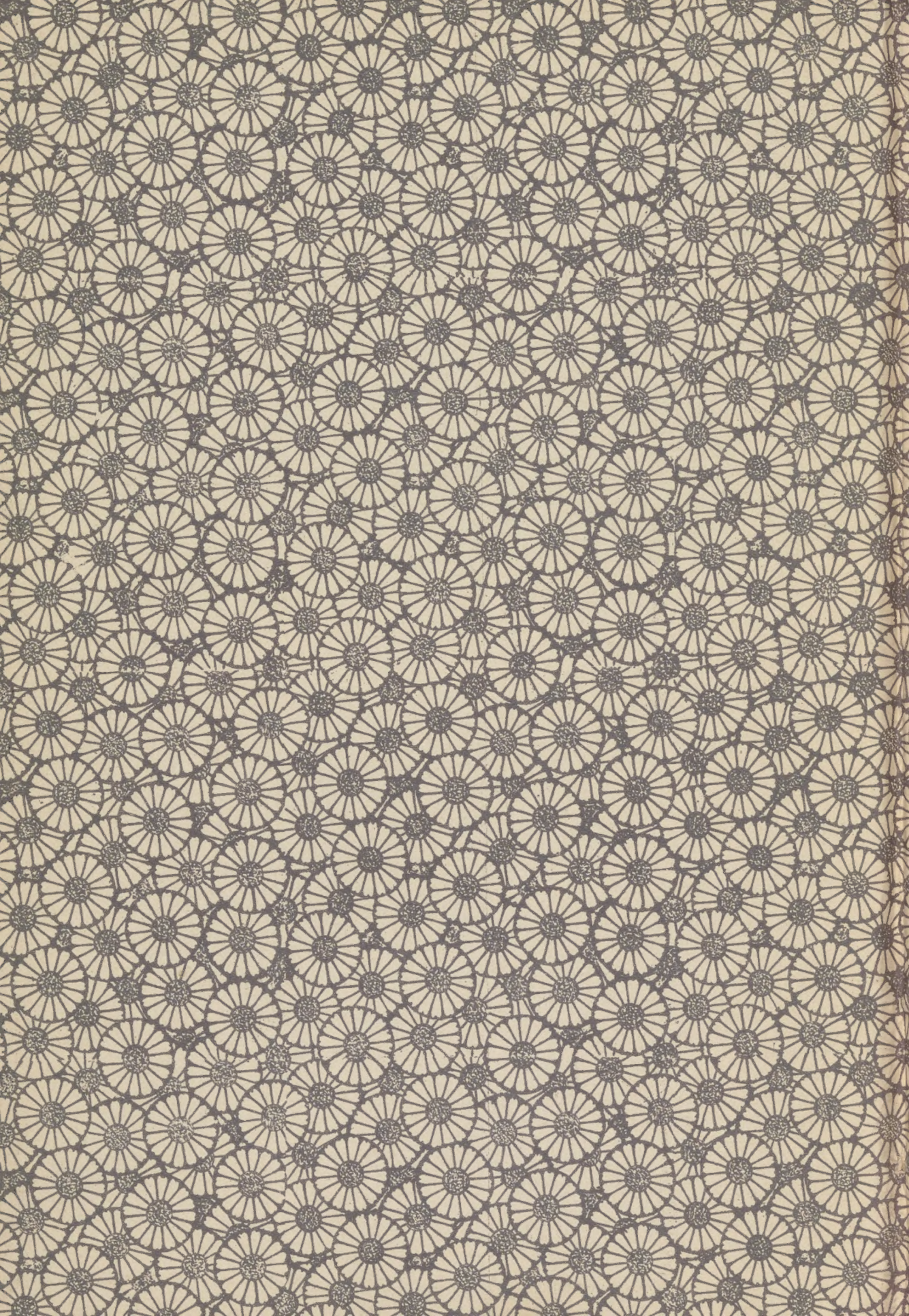




HAN SEANG-TSZE AND HO SEEN-KOO.









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